

cotyledonary), collected during two autumn periods, were examined to investigate the effect of growing season on *embryo* development. In

-more-

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Display 7/8,K/1 (Item 1 from file: 5)

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comparison, the influence of growth conditions on the development of *somatic* embryos in vitro was also studied. Treatment with abscisic acid (ABA) and polyethylene glycol-4000 induced the development of *somatic* cotyledonary embryos similar to zygotic embryos with respect to morphology and anatomy, as illustrated by the differentiation of the apical meristems and of the procambium. The pattern of accumulation of starch and protein was also similar in these embryos. *Somatic* cotyledonary embryos that developed spontaneously without ABA showed defective accumulation of storage material and a general failure to form the shoot apical meristem, leading to very low *germination* rates. Vacuolar phenolic deposits were observed along the procambium of both zygotic and *somatic* embryos regardless of the maturation stage. Tracheid formation was observed only in *somatic* embryos formed without ABA in the medium and in precociously germinated *somatic* embryos. Phenolic vacuolar inclusions were frequently observed in epidermal cells of these embryos.

DESCRIPTORS:

...ORGANISMS: *somatic* *embryo*, zygotic *embryo*

- end of record -

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Display 7/8,K/2 (Item 2 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

12775056 BIOSIS NO.: 200000528679

Effect of vitamins and inorganic micronutrients on callus growth and *somatic* embryogenesis from young mature leaves of rose.

2000

REGISTRY NUMBERS: 50-32-8Q: BAP; 94-41-7Q: BAP; 1214-39-7Q: BAP;
12788-93-1Q: BAP; 1214-39-7: BENZYLAMINOPURINE; 87-51-4: IAA; 7440-48-4
: COBALT; 7440-50-8: COPPER; 7553-56-2: IODINE; 7439-96-5: MANGANESE;
7440-66-6: ZINC

DESCRIPTORS:

MAJOR CONCEPTS: Horticulture (Agriculture); Development; Nutrition

BIOSYSTEMATIC NAMES: Rosaceae--Dicotyledones, Angiospermae, Spermatophyta
, Plantae

ORGANISMS: Rosa sp. (Rosaceae)--hybrids, ornamental crop

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Angiosperms; Dicots; Plants;
Spermatophytes; Vascular Plants

CHEMICALS & BIOCHEMICALS: BAP {benzylaminopurine}--plant growth
regulator; IAA--plant growth regulator; cobalt--nutrient; copper--

-more-

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Display 7/8,K/2 (Item 2 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

nutrient; iodine--nutrient; manganese--nutrient; vitamins--plant
growth regulator; zinc--nutrient

METHODS & EQUIPMENT: leaf explant culture--Murashige and Skoog medium,
propagation method, *somatic* embryogenesis

CONCEPT CODES:

32500 Tissue Culture, Apparatus, Methods and Media
10060 Biochemical Studies-General
10063 Biochemical Studies-Vitamins
10069 Biochemical Studies-Minerals
13202 Nutrition-General Studies, Nutritional Status and Methods
25502 Developmental Biology-Embryology-General and Descriptive
51504 Plant Physiology, Biochemistry and Biophysics-Nutrition
51510 Plant Physiology, Biochemistry and Biophysics-Growth,

S5 89210 SOMATIC
?s s4 and s5
7168 S4
89210 S5
S6 806 S4 AND S5

?rd

...examined 50 records (50)
...examined 50 records (100)
...examined 50 records (150)
...examined 50 records (200)
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...examined 50 records (600)
...examined 50 records (650)
...examined 50 records (700)
...examined 50 records (750)
...examined 50 records (800)
...completed examining records
S7 513 RD (unique items)

?d s7/8,k/all

Display 7/8,K/1 (Item 1 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

12787156 BIOSIS NO.: 200000540779

Anatomical study of zygotic and *somatic* embryos of *Tilia cordata*.

2000

REGISTRY NUMBERS: 94-75-7: 2 4-D; 21293-29-8: ABA; 21293-29-8: ABSCISIC
ACID

DESCRIPTORS:

MAJOR CONCEPTS: Development; Morphology

BIOSYSTEMATIC NAMES: Tiliaceae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: *Tilia cordata* (Tiliaceae)--*somatic* *embryo*, zygotic
embryo

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Angiosperms; Dicots; Plants;
Spermatophytes; Vascular Plants

CHEMICALS & BIOCHEMICALS: 2,4-D--plant growth regulator; ABA (abscisic
acid)--plant growth regulator

CONCEPT CODES:

10060 Biochemical Studies-General

-more-

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Display 7/8,K/1 (Item 1 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11102 Anatomy and Histology, General and Comparative-Gross Anatomy

25502 Developmental Biology-Embryology-General and Descriptive

51000 Morphology, Anatomy and Embryology of Plants

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

51522 Plant Physiology, Biochemistry and Biophysics-Chemical
Constituents

BIOSYSTEMATIC CODES:

26865 Tiliaceae

Anatomical study of zygotic and *somatic* embryos of *Tilia cordata*.

ABSTRACT: A comparative anatomical study was carried out on zygotic and
somatic embryos of *Tilia cordata* Mill. to evaluate the effect of growth
conditions on their development. Zygotic embryos (heart-shaped, torpedo,

Status: Path 1 of [Dialog]

Status: Initializing TCP/IP using (UseTelnetProto 1 ServiceID pto-dialog)
Trying 3106900061...Open

DIALOG INFORMATION SERVICES

PLEASE LOGON:

***** HHHHHHHH SSSSSSSS?

Status: Signing onto Dialog

ENTER PASSWORD:

***** HHHHHHHH SSSSSSSS?nzf0xzjb *****

Welcome to DIALOG

Status: Connected

Dialog level 00.12.12D

Last logoff: 11jan01 07:18:30

Logon file001 11jan01 13:51:53

KWIC is set to 50.

HIGHLIGHT set on as '*'

*** NEW Current Year Ranges Install ***

File 1:ERIC 1966-2000/Dec 05

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Set	Items	Description
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?b 5,10,50,76,203

11jan01 13:52:34 User260019 Session D34.1

\$0.41 0.118 DialUnits File1

\$0.41 Estimated cost File1

\$0.03 TYMNET

\$0.44 Estimated cost this search

\$0.44 Estimated total session cost 0.118 DialUnits

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File 5:Biosis Previews(R) 1969-2001/Jan W2

(c) 2001 BIOSIS

File 10:AGRICOLA 70-2000/Dec

(c) format only 2000 The Dialog Corporation

File 50:CAB Abstracts 1972-2001/Dec

(c) 2001 CAB International

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(c) 2000 Cambridge Sci Abs

File 203:AGRIS 1974-2000/Aug

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Set	Items	Description
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?s somatic embryo(?)

S1 0 SOMATIC EMBRYO(?)

?s germination

S2 156397 GERMINATION

?s embryo

S3 169368 EMBRYO

?s s2 and s3

156397 S2

169368 S3

S4 7168 S2 AND S3

?s somatic

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10050650 BIOSIS NO.: 199598505568

***Somatic* embryogenesis of *Cyclamen persicum* in liquid medium.**

1995

REGISTRY NUMBERS: 57-50-1: SUCROSE; 525-79-1Q: KINETIN; 9001-54-1Q: KINETIN
; 94-75-7: 2 4-D

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Chemical
Coordination and Homeostasis; Development; Methods and Techniques;
Physiology; Reproduction

BIOSYSTEMATIC NAMES: Primulaceae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: *Cyclamen persicum* (Primulaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: SUCROSE; KINETIN; 2,4-D

MISCELLANEOUS TERMS: ARABINOGALACTAN-PROTEINS; AUXIN; CELL LINE
INITIATION; CULTURE METHOD; KINETIN; OSMOLARITY; PHYTOHORMONE UPTAKE;

-more-

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10068587 BIOSIS NO.: 199598523505

Control of hyperhydricity of mango *somatic* embryos.

1995

REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Chemical Coordination and Homeostasis; Development; Horticulture (Agriculture); Methods and Techniques; Physiology; Reproduction

BIOSYSTEMATIC NAMES: Anacardiaceae--Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: Mangifera indica (Anacardiaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants; spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: ABSCISIC ACID

MISCELLANEOUS TERMS: ABSCISIC ACID; DEHYDRATION; *SOMATIC*

EMBRYOGENESIS; TISSUE CULTURE METHOD; VITRIFICATION

CONCEPT CODES:

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Display 7/8,K/135 (Item 135 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

- 10011 Biochemistry-Physiological Water Studies (1970-)
- 32500 Tissue Culture, Apparatus, Methods and Media
- 51502 Plant Physiology, Biochemistry and Biophysics-Water Relations
- 51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation
- 51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
- 51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances
- 51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and Methods
- 53004 Horticulture-Tropical and Subtropical Fruits and Nuts; Plantation Crops
- 10066 Biochemical Studies-Lipids
- 25508 Developmental Biology-Embryology-Morphogenesis, General

BIOSYSTEMATIC CODES:

25565 Anacardiaceae

Control of hyperhydricity of mango *somatic* embryos.

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Display 7/8,K/135 (Item 135 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

ABSTRACT: Hyperhydricity of immature *somatic* embryos has been a limiting factor for the development of highly embryogenic suspension cultures of many important mango cultivars. Reversion of hyperhydricity was achieved in two ways: 1) heart-stage *somatic* embryos (2-3 mm length) were partially dehydrated under controlled conditions at high relative humidity (RH) for 24-48 h and 2) the gelling agent (Gel-Gro) concentration of the plant growth medium was increased from 2.0 to 6.0 g l⁻¹. Partially dehydrated immature *somatic* embryos were normal in appearance. *Somatic* embryos that were partially dehydrated germinated precociously when cultured on maturation medium. Although abscisic acid (ABA) did not reverse hyperhydricity of primary *somatic* embryos, ABA did stimulate the reversal of this abnormal pattern of development among secondary embryos. ABA (500 µM) inhibited precocious *germination* and permitted *somatic* *embryo* maturation. Partially dehydrated, immature *somatic* embryos (4-7 mm long) remained viable for up to 32 days in the absence of maturation medium under high RH.

MISCELLANEOUS TERMS: ...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/136

(Item 136 from file: 5)

***somatic* embryos. II. Effect of nutrient supplements.**

1995

REGISTRY NUMBERS: 57-50-1: SUCROSE; 50-99-7: GLUCOSE; 57-48-7Q: FRUCTOSE;
30237-26-4Q: FRUCTOSE; 69-65-8Q: MANNITOL; 87-78-5Q: MANNITOL

DESCRIPTORS:

MAJOR CONCEPTS: Agronomy (Agriculture); Development; Nutrition;
Physiology; Reproduction

BIOSYSTEMATIC NAMES: Leguminosae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: Medicago sativa (Leguminosae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: SUCROSE; GLUCOSE; FRUCTOSE; MANNITOL

MISCELLANEOUS TERMS: *EMBRYO* MATURATION; FRUCTOSE; GLUCOSE; MANNITOL;
SEEDLING VIGOR; SUCROSE; SYNTHETIC SEEDS

-more-

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Display 7/8,K/134 (Item 134 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

CONCEPT CODES:

51502 Plant Physiology, Biochemistry and Biophysics-Water Relations
51504 Plant Physiology, Biochemistry and Biophysics-Nutrition
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
52506 Agronomy-Forage Crops and Fodder
10068 Biochemical Studies-Carbohydrates
13220 Nutrition-Carbohydrates (1972-)

BIOSYSTEMATIC CODES:

26260 Leguminosae

***Germination* of alfalfa (Medicago sativa L.) seeds and desiccated**

***somatic* embryos. II. Effect of nutrient supplements.**

ABSTRACT: The vigor of seedlings from desiccated *somatic* embryos of
Medicago sativa is less than in seeds and this limits the utilization of
synthetic seeds for the establishment of plants in the field or

-more-

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Display 7/8,K/134 (Item 134 from file: 5)

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greenhouse. To determine whether low seedling vigor was caused by a lack
of protein or carbohydrate reserves, the desiccated *somatic* embryos
were imbibed on agar media supplemented with sucrose and/or Murashige and
Skoog (MS) salts. The combination of 10 g L-1 sucrose and half-strength
MS increased conversion, seedling fresh mass, shoot and root length, and
number of leaves in the seedlings from *somatic* embryos at 14 d after
imbibition. Sucrose could be replaced by glucose or fructose, but not
mannitol. Sucrose had a stimulating effect only if applied...

...not if it was applied at 7 d after imbibition. Neither the amino acids,
asparagine or glutamine, nor gibberellic acid had any effect on the
germination or vigor of *somatic* embryos. Since the same stimulation
was observed in seeds, the lack of nutrients does not seem to be the
physiological factor limiting vigor, but *germination* on nutrient media
may be a remedial way to enhance seedling development. Low seedling vigor
therefore may be a consequence of inadequate or abnormal maturation of
somatic embryos.

MISCELLANEOUS TERMS: *EMBRYO* MATURATION...

- end of record -

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Display 7/8,K/135 (Item 135 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

REGISTRY NUMBERS: 65-61-2: ACRIDINE ORANGE

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Morphology

BIOSYSTEMATIC NAMES: Umbelliferae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: Daucus carota (Umbelliferae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: ACRIDINE ORANGE

MISCELLANEOUS TERMS: COTYLEDON; *GERMINATION*; HYPOCOTYL; ROOT;

ULTRASTRUCTURE; VACUOLAR PH

CONCEPT CODES:

10060 Biochemical Studies-General

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Display 7/8,K/133 (Item 133 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

51000 Morphology, Anatomy and Embryology of Plants

BIOSYSTEMATIC CODES:

26915 Umbelliferae

Vacuolar accumulation of acridine orange and neutral red in zygotic and
somatic embryos of carrot (*Daucus carota* L.)....

- end of record -

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Display 7/8,K/133 (Item 133 from file: 5)

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...ABSTRACT: indicate differences in vacuolar pH, was studied during
embryogenesis of carrot. Neutral red accumulated barely in proembryogenic
masses, but was present conspicuously in globular-shaped *somatic*
embryos. From the late globular to the torpedo-shaped stage, it was
mainly found in the root side of the *somatic* *embryo*. Here, neutral
red was predominantly present in large dark-red to purple stained
vesicles. In the cotyledons neutral red was found in small orange
vesicles. In zygotic embryos of carrot, the dye was uniformly distributed
with no specific localization in organelles. During *germination*,
however, neutral red accumulated mainly in regions in the root side and
the hypocotyl of the germling. Acridine orange was dispersed erratically
in proembryogenic masses with a great variety in intensity. It was quite
obviously present in early stages of *somatic* embryogenesis and
restricted to the root side in late globular to torpedo-shaped embryos.
Confocal images revealed the vacuolar presence of the fluorescence and
the predominant presence in the protoderm. During *germination* of
zygotic embryos the signal changed from uniform to localized, with sharp

- end of record -

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Display 7/8,K/133 (Item 133 from file: 5)

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borders between fluorescent and non-fluorescent regions. Two to three
days after the beginning of *germination*, acridine orange accumulated
preferentially in the root tip of the germling. Differences between
somatic and zygotic embryos and similarities between *somatic*
embryogenesis and zygotic *embryo* *germination* are discussed.

MISCELLANEOUS TERMS: ...*GERMINATION*;

- end of record -

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Display 7/8,K/134 (Item 134 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10099459 BIOSIS NO.: 199598554377

Germination of alfalfa (*Medicago sativa* L.) seeds and desiccated

suggest that the ABA treatment extended...

- end of record -

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Display 7/8,K/132 (Item 132 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10157369 BIOSIS NO.: 199698612287

***Somatic* embryogenesis from leaf of witloof chicory through suspension culture.**

1995

REGISTRY NUMBERS: 94-75-7: 2 4-D; 525-79-1Q: KINETIN; 9001-54-1Q: KINETIN
DESCRIPTORS:

MAJOR CONCEPTS: Chemical Coordination and Homeostasis; Development;
Methods and Techniques; Reproduction

BIOSYSTEMATIC NAMES: Compositae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: Cichorium intybus (Compositae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: 2,4-D; KINETIN

MISCELLANEOUS TERMS: KINETIN; LEAF VEIN; PLANT GROWTH REGULATOR; TISSUE
CULTURE; 2,4-D

CONCEPT CODES:

-more-

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Display 7/8,K/132 (Item 132 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

32500 Tissue Culture, Apparatus, Methods and Media

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods

BIOSYSTEMATIC CODES:

25840 Compositae

***Somatic* embryogenesis from leaf of witloof chicory through suspension culture.**

ABSTRACT: A procedure for regeneration of *somatic* embryogenesis from
witloof chicory leaf has been developed. Explants were taken from the
distal third part of leaf vein and cultured on Murashige and Skoog...

...weeks. Callus was then suspended in the same medium without agar for 4-6

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Display 7/8,K/132 (Item 132 from file: 5)
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weeks with one change to a fresh medium every 2 weeks. *Embryo*-like
structures appeared upon transfer to liquid MS containing 1.8 mu-M
benzyladenine. *Embryo* *germination* was accomplished in half strength
MS medium with or without 1 g/l activated charcoal.

- end of record -

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Display 7/8,K/133 (Item 133 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10154347 BIOSIS NO.: 199698609265

Vacuolar accumulation of acridine orange and neutral red in zygotic and

***somatic* embryos of carrot (Daucus carota L.).**

1995

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Chemical
Coordination and Homeostasis; Development; Forestry; Metabolism;
Physiology; Reproduction
BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae
ORGANISMS: Coniferopsida (Coniferopsida)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants;
spermatophytes; vascular plants
CHEMICALS & BIOCHEMICALS: ABSCISIC ACID
MISCELLANEOUS TERMS: MOISTURE; PHYTOHORMONE

CONCEPT CODES:

10064 Biochemical Studies-Proteins, Peptides and Amino Acids

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Display 7/8,K/131 (Item 131 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10066 Biochemical Studies-Lipids
13012 Metabolism-Proteins, Peptides and Amino Acids
25508 Developmental Biology-Embryology-Morphogenesis, General
51502 Plant Physiology, Biochemistry and Biophysics-Water Relations
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances
51519 Plant Physiology, Biochemistry and Biophysics-Metabolism
53500 Forestry and Forest Products

BIOSYSTEMATIC CODES:

25102 Coniferopsida

Black spruce *somatic* *embryo* *germination* and desiccation tolerance.

II. Effect of an abscisic acid treatment on protein synthesis.

ABSTRACT: In this paper, the biochemical changes associated with a 20 μ M
abscisic acid (ABA) and desiccation treatment on mature black spruce

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Display 7/8,K/131 (Item 131 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

somatic embryos (SEs) were examined. It was previously shown that this
ABA treatment of black spruce SEs resulted in an earlier, more uniform
germination (i.e., root and shoot growth synchrony) and increased SE
tolerance to slow and fast desiccation. In this paper, mature SEs
(control SEs) were either...

...protein content, dry mass, and SE ABA content compared with the control
SEs. The ABA treatment was the only treatment that maintained a high
percent *germination* following slow desiccation. Seven proteins with
molecular mass of 42-, 33-, 32-, 28-, 27-, 21-, and 20-kDa were
identified as storage proteins. An examination...

...raised to the maize dehydrin. This antibody reacted strongly to a 23-kDa
protein and reacted slightly to three other proteins in mature zygotic
and *somatic* embryos and in all treated SEs. The ABA-treated SEs
appeared to have a slightly elevated quantity of the 23-kDa dehydrin-like
protein (based...

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Display 7/8,K/131 (Item 131 from file: 5)

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...in the controls. The ABA treatment induced the synthesis of two low
molecular mass proteins (12- and 8-kDa) and their synthesis continued
after these *somatic* embryos were desiccated. The synthesis of the 8-kDa
protein was induced when control SEs were desiccated. These results

MISCELLANEOUS TERMS: MOISTURE; PHYTOHORMONE; TEMPERATURE
CONCEPT CODES:

10616 External Effects-Temperature as a Primary Variable-Cold (1971-)

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Display 7/8,K/130 (Item 130 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

51502 Plant Physiology, Biochemistry and Biophysics-Water Relations
51503 Plant Physiology, Biochemistry and Biophysics-Temperature
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances
10011 Biochemistry-Physiological Water Studies (1970-)
10066 Biochemical Studies-Lipids
25508 Developmental Biology-Embryology-Morphogenesis, General
53500 Forestry and Forest Products

BIOSYSTEMATIC CODES:

25102 Coniferopsida

**Black spruce *somatic* *embryo* *germination* and desiccation tolerance. I.
Effects of abscisic acid, cold, and heat treatments on the germinability
of mature black spruce *somatic* embryos.**

ABSTRACT: The effect of cold, abscisic acid (ABA), and heat treatments on

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Display 7/8,K/130 (Item 130 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

the *germination* of mature black spruce *somatic* embryos (SEs) was examined. Specifically, the quality of mature black spruce SEs germinants (as assessed by the presence of hypocotyl vitrification), *germination* time (synchrony of root and shoot growth), and desiccation tolerance was evaluated following the treatments. *Germination* of black spruce SEs without any treatments was high (i.e., 89%), but 43% of germinants exhibited a vitrified hypocotyl and root growth lagged behind...

...treatments and then either germinated or exposed to fast or slow desiccation. The ABA, cold and heat treatments resulted in a slightly earlier, more uniform *germination*, due to increased root growth, but did not increase the quality of germinants. Sixty four percent of mature SEs were tolerant to slow desiccation, but...

...of the mature SEs. These results show that the ABA and cold treatments are beneficial for increasing SE tolerance to slow and fast desiccation, decreasing *germination* time, and increasing the quality of germinants. The ABA treatment was superior with respect to desiccation tolerance and

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Display 7/8,K/130 (Item 130 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
to the quality of germinants.

- end of record -

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Display 7/8,K/131 (Item 131 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10157544 BIOSIS NO.: 199698612462

Black spruce *somatic* *embryo* *germination* and desiccation tolerance.

II. Effect of an abscisic acid treatment on protein synthesis.

1995

REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID

1995

DESCRIPTORS:

MAJOR CONCEPTS: Agronomy (Agriculture); Botany; Development; Horticulture (Agriculture); Physiology; Reproduction
BIOSYSTEMATIC NAMES: Leguminosae--Dicotyledones, Angiospermae, Spermatophyta, Plantae
ORGANISMS: Arachis hypogaea (Leguminosae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants; spermatophytes; vascular plants
MISCELLANEOUS TERMS: *GERMINATION*; PLANT CONVERSION; *SOMATIC*
EMBRYO

CONCEPT CODES:

11107 Anatomy and Histology, General and Comparative-Regeneration and Transplantation (1971-)
25508 Developmental Biology-Embryology-Morphogenesis, General

-more-

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Display 7/8,K/129 (Item 129 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

50100 Palynology
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
52514 Agronomy-Oil Crops
53008 Horticulture-Vegetables

BIOSYSTEMATIC CODES:

26260 Leguminosae

ABSTRACT: Synthetic seeds of A. hypogaea were obtained by encapsulating five to thirty day-old *somatic* embryos in calcium alginate. Thirty day-old cotyledonary-stage *somatic* embryos were found suitable for *germination* and subsequent plant conversion. Synthetic seeds responded differently during *germination* on MS medium supplemented with various concentrations of sucrose, maltose, BAP and NAA. The highest *germination* percentage (33.3%) and conversion (25.4%) were recorded on half-strength MS medium with 1% sucrose and maltose each. *Somatic* embryos encapsulated in gel matrix supplemented with MS nutrients, germinated (8.2%) but failed to convert into plants upon storage for 40 days at 4...

- end of record -

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Display 7/8,K/129 (Item 129 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

MISCELLANEOUS TERMS: *GERMINATION*; ...

...*SOMATIC* *EMBRYO*

- end of record -

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Display 7/8,K/130 (Item 130 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10157595 BIOSIS NO.: 199698612513

Black spruce *somatic* *embryo* *germination* and desiccation tolerance. I. Effects of abscisic acid, cold, and heat treatments on the germinability of mature black spruce *somatic* embryos.

1995

REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID

DESCRIPTORS:

MAJOR CONCEPTS: Chemical Coordination and Homeostasis; Development; Physiology; Reproduction
BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae
ORGANISMS: Coniferopsida (Coniferopsida)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants; spermatophytes; vascular plants
CHEMICALS & BIOCHEMICALS: ABSCISIC ACID

10342644 BIOSIS NO.: 199698797562

Embryogenic culture initiation and *somatic* *embryo* development in hybrid firs (Abies alba x Abies cephalonica, and Abies alba x Abies numidica).
1996

REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID; 1214-39-7: BENZYLAMINOPURINE
DESCRIPTORS:

MAJOR CONCEPTS: Chemical Coordination and Homeostasis; Development;
Forestry; Genetics; Methods and Techniques; Reproduction

BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae

ORGANISMS: Abies alba (Coniferopsida); Abies cephalonica (Coniferopsida);
Abies numidica (Coniferopsida)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: ABSCISIC ACID; BENZYLAMINOPURINE

MISCELLANEOUS TERMS: ABSCISIC ACID; BENZYLAMINOPURINE; CULTURE METHOD;
SOMATIC EMBRYOGENESIS

CONCEPT CODES:

-more-

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Display 7/8,K/128 (Item 128 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

03504 Genetics and Cytogenetics-Plant

32500 Tissue Culture, Apparatus, Methods and Media

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods

53500 Forestry and Forest Products

02504 Cytology and Cytochemistry-Plant

10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines

10066 Biochemical Studies-Lipids

25508 Developmental Biology-Embryology-Morphogenesis, General

BIOSYSTEMATIC CODES:

25102 Coniferopsida

Embryogenic culture initiation and *somatic* *embryo* development in hybrid firs (Abies alba x Abies cephalonica, and Abies alba x Abies numidica).

-more-

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Display 7/8,K/128 (Item 128 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

...ABSTRACT: of embryogenic cultures. SH medium supplemented with 1 mg/l BAP was the most efficient for callus induction and maintenance. Cultures were composed of early *somatic* embryos with an embryos with an embryonal mass formed of highly cytoplasmic cells, rich in cell organelles and a built up by vacuolated, strongly elongated...

...reserves were observed in cells of embryos cultured on DCR medium containing 1 or 10 mg/l ABA. Cotyledon formation, hypocotyl elongation and low frequency *germination* occurred following transfer of the embryos to the same medium without ABA.

MISCELLANEOUS TERMS: ...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/129 (Item 129 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10182753 BIOSIS NO.: 199698637671

Plant regeneration from synthetic seeds of groundnut, Arachis hypogaea L.

?

Display 7/8,K/127 (Item 127 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10342645 BIOSIS NO.: 199698797563

***Somatic* embryogenesis and plant regeneration from leaf derived callus of winged bean (Psophocarpus tetragonolobus (L.) DC.).**
1996

REGISTRY NUMBERS: 94-75-7: 2,4-D; 87-51-4: IAA; 133-32-4: IBA; 1214-39-7:
BENZYLAMINOPURINE; 525-79-1Q: KINETIN; 9001-54-1Q: KINETIN

DESCRIPTORS:

MAJOR CONCEPTS: Chemical Coordination and Homeostasis; Development;
Horticulture (Agriculture); Methods and Techniques; Reproduction
BIOSYSTEMATIC NAMES: Leguminosae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: Psophocarpus tetragonolobus (Leguminosae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: 2,4-D; IAA; IBA; BENZYLAMINOPURINE; KINETIN

MISCELLANEOUS TERMS: BENZYLAMINOPURINE; CULTURE METHOD; IAA; IBA;

KINETIN; MURASHIGE AND SKOOG MEDIUM; 2,4-D

-more-

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Display 7/8,K/127 (Item 127 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

CONCEPT CODES:

32500 Tissue Culture, Apparatus, Methods and Media
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances
51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods
53008 Horticulture-Vegetables
02504 Cytology and Cytochemistry-Plant
10060 Biochemical Studies-General
10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
25508 Developmental Biology-Embryology-Morphogenesis, General

BIOSYSTEMATIC CODES:

26260 Leguminosae

***Somatic* embryogenesis and plant regeneration from leaf derived callus of winged bean (Psophocarpus tetragonolobus (L.) DC.)....**

- end of record -

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Display 7/8,K/127 (Item 127 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

ABSTRACT: ***Somatic* embryos** were obtained from callus cultures derived from leaf explants of the winged bean, *Psophocarpus tetragonolobus* (L.) DC. Initiation and development of the ***somatic* embryos** occurred with a two-step culture method. Callus cultures initiated on MS medium with NAA and BAP, upon transfer to a new medium with IAA and BAP, produced ***somatic* embryos**. Maximum embryogenesis of 60% was obtained on induction medium with 0.5 mg/l NAA plus 1.0 mg/l BAP followed by transfer to a secondary medium with 0.1 mg/l IAA and 2.0 mg/l BAP. Optimal ***embryo* germination*** and plantlet development was achieved on MS medium with 0.2 mg/l BAP plus 0.1 mg/l IBA. The regenerated plants were successfully transferred...

- end of record -

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Display 7/8,K/128 (Item 128 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10375788 BIOSIS NO.: 199698830706

Effects of abscisic acid, osmolarity and temperature on in vitro development of recalcitrant mango nucellar embryos.

1996

REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Chemical Coordination and Homeostasis; Development; Horticulture (Agriculture); Methods and Techniques; Physiology; Reproduction

BIOSYSTEMATIC NAMES: Anacardiaceae--Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: Mangifera indica (Anacardiaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants; spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: ABSCISIC ACID

MISCELLANEOUS TERMS: CULTURE METHOD; RECALCITRANCE

CONCEPT CODES:

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Display 7/8,K/126 (Item 126 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

- 10011 Biochemistry-Physiological Water Studies (1970-)
- 51502 Plant Physiology, Biochemistry and Biophysics-Water Relations
- 51503 Plant Physiology, Biochemistry and Biophysics-Temperature
- 51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation
- 51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
- 51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances
- 51520 Plant Physiology, Biochemistry and Biophysics-Translocation, Accumulation
- 51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and Methods
- 53004 Horticulture-Tropical and Subtropical Fruits and Nuts; Plantation Crops
- 10060 Biochemical Studies-General
- 10066 Biochemical Studies-Lipids
- 10614 External Effects-Temperature as a Primary Variable (1971-)
- 25508 Developmental Biology-Embryology-Morphogenesis, General

BIOSYSTEMATIC CODES:

-more-

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Display 7/8,K/126 (Item 126 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

25565 Anacardiaceae

ABSTRACT: Development of cotyledonary-stage nucellar embryos of mango was arrested in vitro by exposure to 750-1750 μ M ABA. The enlargement and *germination* of nucellar embryos was inhibited for as long as 4 weeks after subculture from ABA-containing medium. Mannitol at concentrations between 7.5 and 12.5% inhibited nucellar *embryo* development, presumably due to osmotic effects; however, there was no residual effect after subculture of *somatic* embryos onto medium without mannitol. Temperatures between 22.5 and 37.5 degree C stimulated *embryo* development, whereas lower temperatures (7.5 and 15 degree C) delayed *germination*. There was no *germination* 1 month after *somatic* embryos, pulsed for 8 weeks at 7.5 degree C, were transferred to 22.5 degree C; however, after 2 months, 86% of these *somatic* embryos germinated. These results indicate that it is possible to induce developmental arrest in recalcitrant mango embryos with high concentrations of ABA, mannitol or low...

- end of record -

Horticulture (Agriculture); Methods and Techniques; Physiology;
Reproduction
BIOSYSTEMATIC NAMES: Anacardiaceae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae
ORGANISMS: Mangifera indica (Anacardiaceae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants
CHEMICALS & BIOCHEMICALS: ABSCISIC ACID; 2,4-D
MISCELLANEOUS TERMS: ABSCISIC ACID; CULTURE METHOD; DEHYDRATION;
RELATIVE HUMIDITY; 2,4-D

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Display 7/8,K/125 (Item 125 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
CONCEPT CODES:

10620 External Effects-Humidity (1972-)
51502 Plant Physiology, Biochemistry and Biophysics-Water Relations
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances
51520 Plant Physiology, Biochemistry and Biophysics-Translocation,
Accumulation
51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods
53004 Horticulture-Tropical and Subtropical Fruits and Nuts; Plantation
Crops
10011 Biochemistry-Physiological Water Studies (1970-)
10060 Biochemical Studies-General
10066 Biochemical Studies-Lipids
25508 Developmental Biology-Embryology-Morphogenesis, General
BIOSYSTEMATIC CODES:

-more-

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Display 7/8,K/125 (Item 125 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
25565 Anacardiaceae

**Effects of abscisic acid, osmolarity and partial desiccation on the
development of recalcitrant mango *somatic* embryos.**

ABSTRACT: Inhibition of mango *somatic* *embryo* growth was induced in
vitro by treatments for 4 or more weeks with abscisic acid (0-100 μ M
ABA) with and without high osmolarity provided by mannitol (0-10%). High
osmolarity and ABA significantly affected *somatic* *embryo* length,
precocious *germination* and the production of good quality secondary
somatic embryos. High osmolarity also affected root elongation.
Abscisic acid was more effective in suppressing growth and development of
gtoreq 0.5 cm-length *somatic* embryos than smaller *somatic* embryos.
Development beyond the heart stage was significantly inhibited by both
ABA and mannitol treatments. The recovery of good quality *somatic*
embryos was enhanced by high levels of ABA (100 μ M) with and without
mannitol (0.5%). *Somatic* embryos that had been pulsed with ABA were
partially desiccated at different relative humidities. Weight loss was

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Display 7/8,K/125 (Item 125 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
affected only by relative humidity; and ABA did...

- end of record -

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Display 7/8,K/126 (Item 126 from file: 5)

MAJOR CONCEPTS: Development; Methods and Techniques
BIOSYSTEMATIC NAMES: Liliaceae--Monocotyledones, Angiospermae,
Spermatophyta, Plantae; Plantae-Unspecified--Plantae
ORGANISMS: plant (Plantae - Unspecified); Alstroemeria gayana (Liliaceae)
; Alstroemeria incarnata (Liliaceae); Alstroemeria pelegrina
(Liliaceae); Alstroemeria violacea (Liliaceae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; monocots; plants;
spermatophytes; vascular plants
MISCELLANEOUS TERMS: CULTURE MEDIUM; DEVELOPMENT; *EMBRYO* CULTURE;
GENOTYPE EFFECTS; INTERSPECIFIC HYBRIDS; METHODS AND TECHNIQUES; OVULE
CULTURE; REGENERATION; *SOMATIC* EMBRYOGENESIS

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Display 7/8,K/124 (Item 124 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
CONCEPT CODES:
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods
BIOSYSTEMATIC CODES:
25345 Liliaceae

**Effects of genotype, culture medium and *embryo* developmental stage on the
in vitro responses from ovule cultures of interspecific hybrids of
Alstroemeria.**

ABSTRACT: An ovule culture procedure to rescue hybrid embryos from
incompatible interspecific crosses of Alstroemeria was developed.
Genotype, the developmental stage of *embryo* and the culture medium were
found to have essential roles in the success of ovule culture. Ovules
from 10 interspecific crosses showed different in vitro responses in the
percentages of *embryo* *germination*, callus production and/or shoot

-more-

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Display 7/8,K/124 (Item 124 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
development from the germinated embryos. Responsive genotypes with
greater than 15% *embryo* *germination* were identified. Ovules collected
at 7 days after pollination resulted in 53.3% *embryo* *germination*
after 10 weeks of culture on Murashige and Skoog medium supplemented with
146 mg/l glutamine, 30 g/l sucrose and pH 5.5. This was significantly
higher than those from 4 and 10 DAP, which had a *germination* rate of
14.2 and 12.5%, respectively. Ovules cultured on MS basal medium had a
significantly higher *embryo* *germination* rate of 33.3% than those
cultured on B5 basal medium which averaged 10%. The addition of
2,4-dichlorophenoxyacetic acid and benzyladenine reduced the rate of
embryo *germination* and shoot development.
MISCELLANEOUS TERMS: ...*EMBRYO* CULTURE...

...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/125 (Item 125 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10375789 BIOSIS NO.: 199698830707

**Effects of abscisic acid, osmolarity and partial desiccation on the
development of recalcitrant mango *somatic* embryos.**

1996

REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID; 94-75-7: 2 4-D

DESCRIPTORS:

MAJOR CONCEPTS: Chemical Coordination and Homeostasis; Development;

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Display 7/8,K/11 (Item 11 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
DESCRIPTORS:

ORGANISMS: PARTS ETC: *somatic* *embryo*--

- end of record -

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Display 7/8,K/12 (Item 12 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

12541538 BIOSIS NO.: 200000295040

Improvement of soybean *somatic* *embryo* development and maturation by
abscisic acid treatment.

2000

REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID

DESCRIPTORS:

MAJOR CONCEPTS: Agronomy (Agriculture); Chemical Coordination and
Homeostasis; Development; Methods and Techniques

BIOSYSTEMATIC NAMES: Leguminosae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: Glycine max {soybean} (Leguminosae)--*embryo*, oilseed crop

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Angiosperms; Dicots; Plants;
Spermatophytes; Vascular Plants

CHEMICALS & BIOCHEMICALS: abscisic acid--plant growth regulator

METHODS & EQUIPMENT: *somatic* embryogenesis--culture method

CONCEPT CODES:

52514 Agronomy-Oil Crops

-more-

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Display 7/8,K/12 (Item 12 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

32500 Tissue Culture, Apparatus, Methods and Media

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods

BIOSYSTEMATIC CODES:

26260 Leguminosae

Improvement of soybean *somatic* *embryo* development and maturation by
abscisic acid treatment.

ABSTRACT: Recovery of tissue culture-derived plants through *somatic*
embryogenesis is a useful system for genetic engineering of soybean. The
effect of abscisic acid (ABA) on soybean *somatic* embryogenesis,
development, and maturation was investigated. ABA at 1, 10, 50, 100, and
500 μ M were applied at different stages of *embryo* development; namely,

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Display 7/8,K/12 (Item 12 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

at the globular stage in suspension culture, at the development stage and
at the maturation stage on solid media. ABA promoted *embryo* growth and
development when applied at the globular stage. *Embryo* size, after 15 d
and after 1 mo on development medium, was significantly greater than that
without exposure to ABA. ABA promoted normal *embryo* morphogenesis and
62% more normal embryos developed when embryos were treated with ABA at
the globular stage. ABA treated-embryos showed an increased tolerance to
partial desiccation (from 24% to 78%) and exhibited an increased
germination capability relative to non-ABA-treated controls (54% versus
8%). *Somatic* embryos appeared to undergo a decreasing sensitivity to

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Display 7/8,K/11 (Item 11 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

12552365 BIOSIS NO.: 200000305867

Structure and development of *somatic* embryos formed in Arabidopsis thaliana pt mutant callus cultures derived from seedlings.
2000

REGISTRY NUMBERS: 94-75-7: 2 4-D

DESCRIPTORS:

MAJOR CONCEPTS: Cell Biology; Development; Methods and Techniques

BIOSYSTEMATIC NAMES: Cruciferae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: Arabidopsis thaliana (Cruciferae)--pt mutant, seedling

ORGANISMS: PARTS ETC: *somatic* *embryo*--development, structure

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Angiosperms; Dicots; Plants;
Spermatophytes; Vascular Plants

CHEMICALS & BIOCHEMICALS: 2,4-D--plant growth regulator

METHODS & EQUIPMENT: callus cultures--culture method

CONCEPT CODES:

02504 Cytology and Cytochemistry-Plant

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Display 7/8,K/11 (Item 11 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods

BIOSYSTEMATIC CODES:

25880 Cruciferae

Structure and development of *somatic* embryos formed in Arabidopsis thaliana pt mutant callus cultures derived from seedlings.

ABSTRACT: Seeds of the Arabidopsis thaliana mutant primordia timing (pt) were germinated in 2,4-dichlorophenoxyacetic acid-containing liquid medium. The seedlings formed *somatic* embryos and nonembryogenic and embryogenic callus in vitro in a time period of approximately two to three weeks. Embryogenesis and callus formation were monitored with respect to origin, structure, and development. Ten days after *germination* globular structures appeared in close vicinity of and on the shoot apical meristem (SAM). *Somatic* embryos formed either directly

-more-

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Display 7/8,K/11 (Item 11 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

on the SAM region of the seedling or indirectly on embryogenic callus that developed at the SAM zone. Globular structures developed...

...well, but only incidentally they formed embryos. Upon deterioration, the cotyledons formed callus. Regular subculture of the embryogenic callus gave rise to high numbers of *somatic* embryos. Such primary *somatic* embryos, grown on callus, originated from meristematic cell clusters located under the surface of the callus. Embryos at the globular and heart-shape stage were mostly hidden within the callus. Embryos at torpedo stage appeared at the surface of the callus because their axis elongated. Secondary *somatic* embryos frequently formed directly on primary ones. They preferentially emerged from the SAM region of the primary *somatic* embryos, from the edge of the cotyledons, and from the hypocotyl. We conclude that the strong regeneration capacity of the pt mutant is based on...

- end of record -

MISCELLANEOUS TERMS: *germination*;

- end of record -

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Display 7/8,K/10 (Item 10 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

12572179 BIOSIS NO.: 200000325681

Improvement of direct *somatic* embryogenesis in rice by selecting the optimal developmental stage of explant and applying desiccation treatment.

2000

DESCRIPTORS:

MAJOR CONCEPTS: Agronomy (Agriculture); Development; Methods and Techniques

ORGANISMS: rice--crop

METHODS & EQUIPMENT: desiccation treatment--preparation method; direct *somatic* embryogenesis--optimal explant developmental stage selection, propagation method

MISCELLANEOUS TERMS: *germination*

CONCEPT CODES:

51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation

52502 Agronomy-General, Miscellaneous and Mixed Crops

-more-

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Display 7/8,K/10 (Item 10 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

Improvement of direct *somatic* embryogenesis in rice by selecting the optimal developmental stage of explant and applying desiccation treatment.

ABSTRACT: By selecting the optimal developmental stage of zygotic embryos used as explants and applying desiccation treatment, we improved direct *somatic* embryogenesis in rice scutellum from two cultivars, Nipponbare and Sasanishiki. Zygotic embryos isolated 14-17, 21, 28-30 and 35-40 d after anthesis (DAA) from Nipponbare and 14-17, 18-21, 28-30 and 40-42 DAA from Sasanishiki were cultured on the *embryo* induction medium (EIM). Then they were transferred to *embryo* maturation medium (EMM) and germinated on the *embryo* *germination* medium (EGM). Only immature zygotic *embryo* isolated 14-17 DAA from Nipponbare and Sasanishiki could develop *somatic* embryos that germinated. Explants from embryos at other developmental stages could develop *somatic* embryos only until the elongating or scutellar stage. They enlarged and formed callus without further development. The EIM and EMM consisted of N6 macronutrients, B5 ...

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Display 7/8,K/10 (Item 10 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

...was added to EIM, 1 mg L-1 2,4-D to EMM and 0.01 mg L-1 zeatin to EGM. Developmental processes of *somatic* embryos derived from the explants were observed by scanning electron microscopy. Desiccation treatment of maturing *somatic* *embryo* was proved to produce fully mature *somatic* embryos capable of germinating vigorously.
...METHODS & EQUIPMENT: direct *somatic* embryogenesis...

- end of record -

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Display 7/8,K/10 (Item 10 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
MISCELLANEOUS TERMS: *germination*

- end of record -

...the most active inductive compounds; however, the new generation growth regulators such as thidiazuron are emerging as successful alternatives for high-frequency direct regeneration of *somatic* embryos, even from well differentiated explant tissues. Low-frequency *embryo* production,

-more-

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Display 7/8,K/8 (Item 8 from file: 5)

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poor *germination* and conversion of *somatic* embryos into plantlets and somaclonal variation are the major impediments limiting the utility of *somatic* embryogenesis for biotechnological applications in legumes. These limitations, however, may be considerably reduced in the near future, as more newly developed growth regulators with specific...

...available for experimentation. From the published data, it is apparent that more effort should be given to develop repetitive embryogenic systems with high frequency of *germination* and regeneration, since such systems will find immediate application in mass propagation and other crop improvement programmes. As our understanding of various morphogenic processes, including growth and differentiation of zygotic embryos, is fast expanding, it is conceivable that development of highly efficient *somatic* embryogenic systems with practical application can be anticipated, at least for the important leguminous crops, in the foreseeable future.

MISCELLANEOUS TERMS: ...*somatic* embryogenesis

- end of record -

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Display 7/8,K/9 (Item 9 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

12586243 BIOSIS NO.: 200000339745

Purine and pyrimidine metabolism during the partial drying treatment and *germination* of white spruce (Picea glauca) *somatic* embryos.

2000

REGISTRY NUMBERS: 120-73-0: PURINE; 289-95-2: PYRIMIDINE

DESCRIPTORS:

MAJOR CONCEPTS: Development; Metabolism

BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae

ORGANISMS: Picea glauca {white spruce} (Coniferopsida)--*somatic*
embryo

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Gymnosperms; Plants;
Spermatophytes; Vascular Plants

CHEMICALS & BIOCHEMICALS: purine--metabolism; pyrimidine--metabolism

MISCELLANEOUS TERMS: *germination*; partial drying treatment; Meeting
Abstract

CONCEPT CODES:

10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines

-more-

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Display 7/8,K/9 (Item 9 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

13014 Metabolism-Nucleic Acids, Purines and Pyrimidines

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

00520 General Biology-Symposia, Transactions and Proceedings of
Conferences, Congresses, Review Annuals

BIOSYSTEMATIC CODES:

25102 Coniferopsida

Purine and pyrimidine metabolism during the partial drying treatment and *germination* of white spruce (Picea glauca) *somatic* embryos.

DESCRIPTORS:

...ORGANISMS: *somatic* *embryo*

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Display 7/8,K/7 (Item 7 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
had to reach a water content of 0.23 g H₂O g⁻¹ dcntdotwt (48 h of desiccation at 97% RH) before immersion in liquid nitrogen to germinate at high frequency (93.8%). Thawing techniques had no effect on *embryo* survival. Dried and cryopreserved *somatic* embryos of Picea can also be used to reinduce embryogenic tissue and start new *embryo* production. Best reinduction frequency (66.7%) was obtained from cryopreserved embryos dried at 97% RH and rehydrated at 100% RH for 12 h prior to reinduction. No difference in *embryo* production was noticed between the parent line (1st embryogenic cycle) and the sub-lines (2nd embryogenic cycle). Second generation embryos germinated and regenerated into plantlets...

- end of record -

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Display 7/8,K/7 (Item 7 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
DESCRIPTORS:
...ORGANISMS: *somatic* *embryo*; ...

...*somatic* *embryo*

- end of record -

?

Display 7/8,K/8 (Item 8 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

12594953 BIOSIS NO.: 200000348455

***Somatic* embryogenesis in leguminous plants.**

2000

DESCRIPTORS:

MAJOR CONCEPTS: Development

BIOSYSTEMATIC NAMES: Leguminosae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: legume (Leguminosae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Angiosperms; Dicots; Plants;
Spermatophytes; Vascular Plants

METHODS & EQUIPMENT: micropropagation--culture method

MISCELLANEOUS TERMS: somaclonal variation; *somatic* embryogenesis

CONCEPT CODES:

32500 Tissue Culture, Apparatus, Methods and Media

25502 Developmental Biology-Embryology-General and Descriptive

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

-more-

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Display 7/8,K/8 (Item 8 from file: 5)

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BIOSYSTEMATIC CODES:

26260 Leguminosae

***Somatic* embryogenesis in leguminous plants.**

ABSTRACT: This review examines recent advances in the induction and development of *somatic* embryos in leguminous plants. Emphasis has been given to identify the current trends and successful strategies for the establishment of *somatic* embryogenic systems, particularly in the economically important species. It appears that, in legumes, *somatic* embryogenesis can be realized relatively easily especially in young meristematic tissues such as immature embryos and developing leaves. In the majority of the species examined...

Differentiation

00520 General Biology-Symposia, Transactions and Proceedings of
Conferences, Congresses, Review Annuals
BIOSYSTEMATIC CODES:
25710 Cactaceae

**Plant regeneration through *somatic* embryogenesis in root derieved callus
of elephant tusk cactus (Coryphantha elephantidens (Lem.) Lem.)....**

- end of record -

?

Display 7/8,K/6 (Item 6 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
DESCRIPTORS:
...ORGANISMS: *embryo*
...ORGANISMS: PARTS ETC: *somatic* embryogenesis
MISCELLANEOUS TERMS: ...*somatic* *embryo* *germination*--...

...*somatic* embryogenesis

- end of record -

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Display 7/8,K/7 (Item 7 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
12595025 BIOSIS NO.: 200000348527
**Dried cryopreserved *somatic* embryos of two Picea species provide suitable
material for direct plantlet regeneration and germplasm storage.**
2000

DESCRIPTORS:
MAJOR CONCEPTS: Development; Methods and Techniques
BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae
ORGANISMS: Picea glauca (Coniferopsida)--*somatic* *embryo*; Picea
mariana (Coniferopsida)--*somatic* *embryo*
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Gymnosperms; Plants;
Spermatophytes; Vascular Plants
METHODS & EQUIPMENT: clonal propagation--propagation method;
cryopreservation--preservation, preservation method
MISCELLANEOUS TERMS: desiccation; genotype variation; rehydration;
thawing
CONCEPT CODES:
25502 Developmental Biology-Embryology-General and Descriptive

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Display 7/8,K/7 (Item 7 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
BIOSYSTEMATIC CODES:
25102 Coniferopsida

**Dried cryopreserved *somatic* embryos of two Picea species provide suitable
material for direct plantlet regeneration and germplasm storage.**

ABSTRACT: The present study aimed to develop a cryopreservation method for long-term storage of mature *somatic* embryos of Picea spp. The effects of drying rate, *embryo* water content prior to cryopreservation, thawing rate, and rehydration on survival of cryopreserved *somatic* embryos were investigated. Emphasis was placed on the capacity of cryopreserved *somatic* embryos to germinate and regenerate plantlets directly, or to reinduce embryogenic tissue for new *embryo* production. Firstly, a slow drying rate at 97 or 88% relative humidity (RH) was needed to achieve high *germination* (96.7-100%) and high plantlet conversion rates (26.7-46.7%) (not different from controls). Secondly, *somatic* embryos

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
50526 Botany, General and Systematic-Dicotyledones
10060 Biochemical Studies-General
25502 Developmental Biology-Embryology-General and Descriptive
50530 Botany, General and Systematic-General and Miscellaneous
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
BIOSYSTEMATIC CODES:
26710 Sapindaceae

***Somatic* embryogenesis and plantlet regeneration from leaf explants of
Sapindus mukorossi Gaertn.: A soapnut tree.**

ABSTRACT: *Somatic* embryogenesis and plantlet formation were achieved from
leaf and leaf-derived callus culture of Sapindus mukorossi Gaertn. Callus
subcultured on MS medium containing lower levels...

...1-1) and higher levels of potassium nitrate (2900 mg l-1) resulted in
embryogenic callus often with globular embryos. Rapid and enhanced rate

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Display 7/8,K/5 (Item 5 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
of *embryo* formation was achieved on transfer of embryogenic callus to
an *embryo* proliferation medium containing kinetin (0.5 mg l-1) and a
different source of nitrogen with or without gibberellic acid (0.2 mg
l-1). Increased level of gibberellic acid restricted *embryo*
multiplication and led to *embryo* maturation. Use of kinetin (2.0 mg
l-1) along with ammonium chloride (50 mg l-1) and coconut milk, 10% (v/v)
in the medium proved to be effective for *embryo* *germination* and
plantlet formation. This report describes the protocol for *somatic*
embryogenesis and plant regeneration from leaf explant of S. mukorossi
without any exogenous supply of auxin.
MISCELLANEOUS TERMS: ...*somatic* embryogenesis

- end of record -

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Display 7/8,K/6 (Item 6 from file: 5)

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12608468 BIOSIS NO.: 200000361970

**Plant regeneration through *somatic* embryogenesis in root derieved callus
of elephant tusk cactus (Coryphantha elephantidens (Lem.) Lem.).**

2000

DESCRIPTORS:

MAJOR CONCEPTS: Cell Biology; Development; Methods and Techniques

BIOSYSTEMATIC NAMES: Cactaceae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: Coryphantha elephantidens {elephant tusk cactus} (Cactaceae)--
embryo

ORGANISMS: PARTS ETC: root-derived callus--*somatic* embryogenesis

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Angiosperms; Dicots; Plants;
Spermatophytes; Vascular Plants

MISCELLANEOUS TERMS: plant regeneration; *somatic* *embryo*
germination--successful field transfer; *somatic* embryogenesis;
Meeting Abstract; Meeting Poster

CONCEPT CODES:

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Display 7/8,K/6 (Item 6 from file: 5)

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02504 Cytology and Cytochemistry-Plant

25502 Developmental Biology-Embryology-General and Descriptive

51510 Plant Physiology, Biochemistry and Biophysics-Growth,

Spermatophyta, Plantae
ORGANISMS: Cephaelis ipecacuanha (Rubiaceae)--medicinal plant
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Angiosperms; Dicots; Plants;
Spermatophytes; Vascular Plants
METHODS & EQUIPMENT: callus culture--Murashige and Skoog medium, culture
method, in vitro *somatic* embryogenesis

CONCEPT CODES:

32500 Tissue Culture, Apparatus, Methods and Media
53012 Horticulture-General; Miscellaneous and Mixed Crops
54000 Pharmacognosy and Pharmaceutical Botany

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Display 7/8,K/4 (Item 4 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

BIOSYSTEMATIC CODES:

26680 Rubiaceae

**In vitro *somatic* embryogenesis from callus cultures of Cephaelis
ipecacuanha A. Richard.**

...ABSTRACT: 4.0 mg/l 2,4-D and 3% (w/v) sucrose (Murashige, T., Skoog, F.,
1962. Plant Physiol. 15, 437-497). Plantlet regeneration through
somatic embryogenesis was achieved on MS medium containing 2.5 mg/l
Kin, 1.0 mg/l 2,4-D and 3% (w/v) sucrose. Maturation and *germination* of
somatic embryos was achieved on MS basal salts supplemented with
vitamins and 2% (w/v) sucrose without growth regulators. Histological
studies confirmed induction of *somatic* embryogenesis. Analysis of root
tips of 100 *somatic* *embryo* derived plants revealed that all plants
were morphologically normal and possessed the normal diploid chromosome
number 2n=22. *Somatic* *embryo* derived plantlets were hardened in the
greenhouse and eventually planted in the open field.

...METHODS & EQUIPMENT: Murashige and Skoog medium, culture method, in

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Display 7/8,K/4 (Item 4 from file: 5)

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vitro *somatic* embryogenesis

- end of record -

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Display 7/8,K/5 (Item 5 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

12635126 BIOSIS NO.: 200000388628

***Somatic* embryogenesis and plantlet regeneration from leaf explants of
Sapindus mukorossi Gaertn.: A soapnut tree.**

2000

REGISTRY NUMBERS: 77-06-5: GIBBERELIC ACID; 7727-37-9: NITROGEN; 7757-79-1
: POTASSIUM NITRATE

DESCRIPTORS:

MAJOR CONCEPTS: Botany; Development

BIOSYSTEMATIC NAMES: Sapindaceae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: Sapindus mukorossi Gaertn {soapnut tree} (Sapindaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Angiosperms; Dicots; Plants;
Spermatophytes; Vascular Plants

CHEMICALS & BIOCHEMICALS: gibberellic acid; nitrogen; potassium nitrate

MISCELLANEOUS TERMS: leaf explants; plantlet regeneration; *somatic*
embryogenesis

CONCEPT CODES:

-more-

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Display 7/8,K/5 (Item 5 from file: 5)

Murashige and Skoog medium; polyethylene glycol
METHODS & EQUIPMENT: linear logistic method--analytical method; tissue culture--propagation method
MISCELLANEOUS TERMS: maturation; plantlet regeneration; relative humidity; *somatic* *embryo* *germination*

CONCEPT CODES:

51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation
10060 Biochemical Studies-General
25502 Developmental Biology-Embryology-General and Descriptive
32500 Tissue Culture, Apparatus, Methods and Media
53012 Horticulture-General; Miscellaneous and Mixed Crops

BIOSYSTEMATIC CODES:

25565 Anacardiaceae

Analysis of the effects of maturation treatments on the probabilities of *somatic* *embryo* *germination* and plantlet regeneration in pistachio using a linear logistic method.

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Display 7/8,K/3 (Item 3 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

...ABSTRACT: Skoog (MS) medium without growth regulators. To determine the effects of benzylaminopurine (BAP), racemic (+-) abscisic acid (ABA) and sucrose treatments during maturation on the subsequent *germination* and plantlet regeneration, clusters of mature *somatic* embryos were transferred from maturation medium onto the surface of 0.7% agar-solidified Murashige and Skoog medium. Neither *germination* nor plantlet development medium contained BAP or ABA. *Germination* studies were carried out using 80 *somatic* embryos at every combination of four sucrose concentrations, three maturation periods and either five concentrations of BAP or four of ABA, and the numbers germinating were recorded after four durations of culture. A similar experimental plan was used to study plantlet regeneration. The number of germinated *somatic* embryos increased markedly with duration of the culture on *germination* medium, and was influenced by the concentrations of BAP or ABA in the maturation medium; the concentration of sucrose in this medium had little influence...

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Display 7/8,K/3 (Item 3 from file: 5)

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...levels of BAP or ABA; with ABA, the probability of plantlet regeneration was lower for longer maturation periods. ABA and BAP have similar effects on *somatic* *embryo* *germination* (except at the highest levels used), but BAP is superior to ABA for promoting subsequent plantlet regeneration. Linear logistic models were used to investigate the significance of the treatments, and to estimate the optimum conditions for *germination* and plantlet regeneration.

MISCELLANEOUS TERMS: ...*somatic* *embryo* *germination*

- end of record -

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Display 7/8,K/4 (Item 4 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

12697007 BIOSIS NO.: 200000450509

In vitro *somatic* embryogenesis from callus cultures of *Cephaelis ipecacuanha* A. Richard.

2000

DESCRIPTORS:

MAJOR CONCEPTS: Horticulture (Agriculture); Pharmacognosy (Pharmacology)
BIOSYSTEMATIC NAMES: Rubiaceae--Dicotyledones, Angiospermae,

Differentiation
51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances
51522 Plant Physiology, Biochemistry and Biophysics-Chemical
Constituents
53010 Horticulture-Flowers and Ornamentals

-more-

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Display 7/8,K/2 (Item 2 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

53012 Horticulture-General; Miscellaneous and Mixed Crops
BIOSYSTEMATIC CODES:
26675 Rosaceae

**Effect of vitamins and inorganic micronutrients on callus growth and
somatic embryogenesis from young mature leaves of rose.**

ABSTRACT: The effect of different vitamins and inorganic micronutrients on callus growth and on the induction and proliferation of *somatic* embryos from young mature, fully expanded leaves of rose (Rosa hybrids L.) was investigated. Explants were cultured onto a solid Murashige and Skoog (MS) medium...

...and cobalt (Co), which were added at either the standard MS concentration or at a tenfold increased (Cu, Co) or decreased (Mn, Zn, I) concentration. *Embryo* maturation and *germination* took place on a MS medium supplemented with 5.2 μ M 6-benzyladenine and 5.7 μ M 3-indole-acetic acid. The results indicated that *somatic* embryogenesis

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Display 7/8,K/2 (Item 2 from file: 5)

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from rose leaves was favored by the addition of nicotinic acid and cystein to the culture medium and the increase of Cu concentration, without reducing *embryo* maturation and *germination*.

...METHODS & EQUIPMENT: Murashige and Skoog medium, propagation method,
somatic embryogenesis

- end of record -

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Display 7/8,K/3 (Item 3 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

12700970 BIOSIS NO.: 200000454472

**Analysis of the effects of maturation treatments on the probabilities of
somatic *embryo* *germination* and plantlet regeneration in pistachio
using a linear logistic method.**

2000

REGISTRY NUMBERS: 21293-29-8: ABA; 21293-29-8: ABSCISIC ACID; 50-32-8Q: BAP
; 94-41-7Q: BAP; 1214-39-7Q: BAP; 12788-93-1Q: BAP; 1214-39-7:

BENZYLAMINOPURINE; 25322-68-3: POLYETHYLENE GLYCOL

DESCRIPTORS:

MAJOR CONCEPTS: Horticulture (Agriculture); Development; Methods and
Techniques

BIOSYSTEMATIC NAMES: Anacardiaceae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: Pistacia vera {pistachio} (Anacardiaceae)--nut crop

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Angiosperms; Dicots; Plants;
Spermatophytes; Vascular Plants

CHEMICALS & BIOCHEMICALS: ABA {abscisic acid}; BAP {benzylaminopurine};

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Display 7/8,K/3 (Item 3 from file: 5)

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cotyledonary), collected during two autumn periods, were examined to investigate the effect of growing season on *embryo* development. In

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Display 7/8,K/1 (Item 1 from file: 5)

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comparison, the influence of growth conditions on the development of *somatic* embryos in vitro was also studied. Treatment with abscisic acid (ABA) and polyethylene glycol-4000 induced the development of *somatic* cotyledonary embryos similar to zygotic embryos with respect to morphology and anatomy, as illustrated by the differentiation of the apical meristems and of the procambium. The pattern of accumulation of starch and protein was also similar in these embryos. *Somatic* cotyledonary embryos that developed spontaneously without ABA showed defective accumulation of storage material and a general failure to form the shoot apical meristem, leading to very low *germination* rates. Vacuolar phenolic deposits were observed along the procambium of both zygotic and *somatic* embryos regardless of the maturation stage. Tracheid formation was observed only in *somatic* embryos formed without ABA in the medium and in precociously germinated *somatic* embryos. Phenolic vacuolar inclusions were frequently observed in epidermal cells of these embryos.

DESCRIPTORS:

...ORGANISMS: *somatic* *embryo*, zygotic *embryo*

- end of record -

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Display 7/8,K/2 (Item 2 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

12775056 BIOSIS NO.: 200000528679

Effect of vitamins and inorganic micronutrients on callus growth and *somatic* embryogenesis from young mature leaves of rose.
2000

REGISTRY NUMBERS: 50-32-8Q: BAP; 94-41-7Q: BAP; 1214-39-7Q: BAP;
12788-93-1Q: BAP; 1214-39-7: BENZYLAMINOPURINE; 87-51-4: IAA; 7440-48-4
: COBALT; 7440-50-8: COPPER; 7553-56-2: IODINE; 7439-96-5: MANGANESE;
7440-66-6: ZINC

DESCRIPTORS:

MAJOR CONCEPTS: Horticulture (Agriculture); Development; Nutrition
BIOSYSTEMATIC NAMES: Rosaceae--Dicotyledones, Angiospermae, Spermatophyta
, Plantae

ORGANISMS: Rosa sp. (Rosaceae)--hybrids, ornamental crop

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Angiosperms; Dicots; Plants;
Spermatophytes; Vascular Plants

CHEMICALS & BIOCHEMICALS: BAP {benzylaminopurine}--plant growth
regulator; IAA--plant growth regulator; cobalt--nutrient; copper--

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Display 7/8,K/2 (Item 2 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

nutrient; iodine--nutrient; manganese--nutrient; vitamins--plant
growth regulator; zinc--nutrient

METHODS & EQUIPMENT: leaf explant culture--Murashige and Skoog medium,
propagation method, *somatic* embryogenesis

CONCEPT CODES:

32500 Tissue Culture, Apparatus, Methods and Media
10060 Biochemical Studies-General
10063 Biochemical Studies-Vitamins
10069 Biochemical Studies-Minerals
13202 Nutrition-General Studies, Nutritional Status and Methods
25502 Developmental Biology-Embryology-General and Descriptive
51504 Plant Physiology, Biochemistry and Biophysics-Nutrition
51510 Plant Physiology, Biochemistry and Biophysics-Growth,

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11179660 BIOSIS NO.: 199799800805

Interactions of ancymidol with sucrose and alpha-naphthaleneacetic acid in promoting asparagus (*Asparagus officinalis* L.) *somatic* embryogenesis.
1997

REGISTRY NUMBERS: 12771-68-5: ANCYMIDOL; 57-50-1: SUCROSE; 86-87-3:
ALPHA-NAPHTHALENEACETIC ACID

DESCRIPTORS:

MAJOR CONCEPTS: Chemical Coordination and Homeostasis; Development;
Horticulture (Agriculture); Methods and Techniques; Reproduction

BIOSYSTEMATIC NAMES: Liliaceae--Monocotyledones, Angiospermae,
Spermatophyta, Plantae; Plantae-Unspecified--Plantae

ORGANISMS: asparagus (Liliaceae); plant (Plantae - Unspecified);
Asparagus officinalis (Liliaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; monocots; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: ANCYMIDOL; SUCROSE; ALPHA-NAPHTHALENEACETIC
ACID

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Display 7/8,K/81 (Item 81 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

MISCELLANEOUS TERMS: Research Article; ALPHA-NAPHTHALENEACETIC ACID;
ANCYMIDOL; ANCYMIDOL WITH SUCROSE INTERACTIONS; DEVELOPMENT;
HORTICULTURE; METHODOLOGY; PLANT GROWTH REGULATOR; *SOMATIC*
EMBRYOGENESIS

CONCEPT CODES:

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods

53008 Horticulture-Vegetables

BIOSYSTEMATIC CODES:

25345 Liliaceae

Interactions of ancymidol with sucrose and alpha-naphthaleneacetic acid in promoting asparagus (*Asparagus officinalis* L.) *somatic* embryogenesis.

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Display 7/8,K/81 (Item 81 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

ABSTRACT: Interactions of varying ancymidol concentrations with those of
alpha-naphthaleneacetic acid (NAA) or sucrose in *embryo* induction
medium were related to the production and development of asparagus
(*Asparagus officinalis* L.) *somatic* embryos, and to the ability of these
embryos to germinate. A significant sucrosexancymidol interaction was
observed only for the production of bipolar embryos; 4% sucrose...

...1 ancymidol gave the best result, 78 g-1 callus. The frequency of
globular embryos decreased as sucrose or ancymidol concentrations
increased. Sucrose concentration affected *embryo* *germination*; 3% and
4% sucrose were optimal with approximately 60% and 40% of bipolar and
globular embryos germinating, respectively. Significant ancymidol times
NAA interactions were observed for the production of bipolar and globular
embryos and their *germination*. Varying ancymidol concentrations
affected *embryo* production and *germination* in combination with 0.1 mg
l-1 NAA, but not with 1.0 mg l-1 NAA. The treatment combination of 0.1 mg
...

- end of record -

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Display 7/8,K/81 (Item 81 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
MISCELLANEOUS TERMS: ...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/82 (Item 82 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11179580 BIOSIS NO.: 199799800725

Distribution and changes of reserve materials in cotyledon cells of *Panax ginseng* related to direct *somatic* embryogenesis and *germination*.
1997

DESCRIPTORS:

MAJOR CONCEPTS: Cell Biology; Development; Horticulture (Agriculture);
Reproduction

BIOSYSTEMATIC NAMES: Araliaceae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae; Plantae-Unspecified--Plantae

ORGANISMS: plant (Plantae - Unspecified); *Panax ginseng* (Araliaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

MISCELLANEOUS TERMS: Research Article; CELL BIOLOGY; COTYLEDON CELLS;

CULTURE METHOD; DIRECT *SOMATIC* EMBRYOGENESIS; DISTRIBUTION;

GERMINATION; HORTICULTURE; METHODOLOGY; MISCELLANEOUS METHOD;

MURASHIGE AND SKOOG MEDIUM; RESERVE MATERIALS CHANGES

CONCEPT CODES:

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Display 7/8,K/82 (Item 82 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

02504 Cytology and Cytochemistry-Plant

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

53012 Horticulture-General; Miscellaneous and Mixed Crops

BIOSYSTEMATIC CODES:

25590 Araliaceae

Distribution and changes of reserve materials in cotyledon cells of *Panax ginseng* related to direct *somatic* embryogenesis and *germination*.

ABSTRACT: Cotyledon explants from zygotic embryos of *Panax ginseng* produced *somatic* embryos on Murashige and Skoog basal medium without growth regulators. *Somatic* embryos developed directly from epidermal cells at the cotyledon base. *Somatic* embryos were always formed from the side of the cotyledon opposite to the one attached to the medium surface regardless of cotyledon orientation. The frequency of *somatic* *embryo* formation from the abaxial epidermis (66%) was much higher than that from

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Display 7/8,K/82 (Item 82 from file: 5)
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the adaxial epidermis (12%). Differences in embryogenic response were likely related to cell structure. Abaxial epidermal cells were filled with reserve materials (lipid bodies), while adaxial epidermal cells were devoid of any prominent reserves. During *germination*, the reserve materials in the cells of the cotyledons disappeared rapidly. At the same time, the competency of *somatic* *embryo* formation from cotyledon explants declined rapidly to zero. Upon culture of the cotyledon explants (for *somatic* *embryo* induction), lipid bodies slowly disappeared, but starch grains accumulated prominently. Reserve materials disappeared after commencement of embryogenic cell division. During *germination*, lipid bodies rapidly disappeared, and chloroplasts developed instead of starch grains.

MISCELLANEOUS TERMS: ...DIRECT *SOMATIC* EMBRYOGENESIS...

...*GERMINATION*;

- end of record -

?

Display 7/8,K/83 (Item 83 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11178271 BIOSIS NO.: 199799799416

***Somatic* embryogenesis and *germination* of *Melia azedarach* var. *japonica* through immature *embryo* culture.**

1996

DESCRIPTORS:

MAJOR CONCEPTS: Chemical Coordination and Homeostasis; Development;
Forestry; Horticulture (Agriculture); Methods and Techniques;
Reproduction

BIOSYSTEMATIC NAMES: Meliaceae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: *Melia azedarach* var. *japonica* (Meliaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

MISCELLANEOUS TERMS: Research Article; CYTOKININ; DEVELOPMENT; FORESTRY
; *GERMINATION*; HORTICULTURE; IMMATURE *EMBRYO* CULTURE; ORNAMENTAL
TREE; PHYTOHORMONE; PROPAGATION METHOD; *SOMATIC* *EMBRYO* INDUCTION;
SOMATIC EMBRYOGENESIS; TIMBER CROP

-more-

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Display 7/8,K/83 (Item 83 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

CONCEPT CODES:

32500 Tissue Culture, Apparatus, Methods and Media

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods

53010 Horticulture-Flowers and Ornamentals

53500 Forestry and Forest Products

BIOSYSTEMATIC CODES:

26360 Meliaceae

***Somatic* embryogenesis and *germination* of *Melia azedarach* var. *japonica* through immature *embryo* culture.**

...ABSTRACT: var. *japonica* were cultured on MS or modified B-5 (mB-5)
medium containing different kinds of cytokinins (BAP, KN, 2-iP, or ZN).

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Display 7/8,K/83 (Item 83 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

Initial *somatic* embryos could be observed as early as two weeks in
culture. MS medium gave better results on *somatic* *embryo* formation
than mB5 medium. Among the media tested, MS medium containing 0.2 mg/l
BAP appeared to be the best. *Somatic* embryos could be routinely
obtained through PEDC (pre-embryogenic determined cell) pattern. Various
stages of *somatic* embryos were simultaneously observed on the same
explants. However, only a few of them germinated and developed into
plantlets upon transfer to MS medium containing GA-3. ABA, activated
charcoal or air-drying treatments resulted in poor response both on
somatic *embryo* *germination* and further growth.

MISCELLANEOUS TERMS: ...*GERMINATION*;

...IMMATURE *EMBRYO* CULTURE...

...*SOMATIC* *EMBRYO* INDUCTION...

...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/84 (Item 84 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11170880 BIOSIS NO.: 199799792025

A comparison between Theobroma cacao L. zygotic embryogenesis and *somatic* embryogenesis from flora explants.

1997

REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID

DESCRIPTORS:

MAJOR CONCEPTS: Cell Biology; Chemical Coordination and Homeostasis;
Development; Reproduction

BIOSYSTEMATIC NAMES: Plantae-Unspecified--Plantae; Sterculiaceae--

Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: plant (Plantae - Unspecified); Theobroma cacao (Sterculiaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: ABSCISIC ACID

MISCELLANEOUS TERMS: Research Article; ABSCISIC ACID; CELL BIOLOGY;

COMPARISON; DEVELOPMENT; FLORA EXPLANTS; PLANT GROWTH REGULATOR;

SOMATIC EMBRYOGENESIS; ZYGOTIC EMBRYOGENESIS

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Display 7/8,K/84 (Item 84 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

CONCEPT CODES:

02504 Cytology and Cytochemistry-Plant

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

BIOSYSTEMATIC CODES:

26810 Sterculiaceae

A comparison between Theobroma cacao L. zygotic embryogenesis and *somatic* embryogenesis from flora explants.

ABSTRACT: In order to improve the late phases of Theobroma cacao L. embryogenesis from tissues of maternal origin, zygotic embryogenesis and *somatic* embryogenesis were compared, with respect to morphological, histological, and physiological parameters. Zygotic embryogenesis could be divided into three steps: (a) embryogenesis sensu stricto, (b) a...

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Display 7/8,K/84 (Item 84 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

...and underwent a modification in soluble sugar composition.

Monosaccharides and sucrose contents decreased to the benefit of the oligosaccharides raffinose and stachyose. The formation of *somatic* embryos by use of basic protocols was studied to define the limiting factors that could lie behind their poor development. Morphological abnormalities of *somatic* embryos, which represented 80% of the total population, were described. A histological study showed that *somatic* embryos lacked starch and protein reserves; moreover, their water content was much higher than that of their zygotic counterparts. Introducing a growth period into the culture protocol made for better *embryo* development. Adding sucrose and abscisic acid to the maturation medium

was effective in increasing reserve synthesis and resulted in higher
germination, conversion, and acclimatization rates.
MISCELLANEOUS TERMS: ...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/85 (Item 85 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11170704 BIOSIS NO.: 199799791849

In vitro propagation of *Podophyllum peltatum* L. by the cultures of embryos and divided embryos.

1997

REGISTRY NUMBERS: 525-79-1Q: KINETIN; 9001-54-1Q: KINETIN; 86-87-3Q:
NAPHTHALENEACETIC ACID; 26445-01-2Q: NAPHTHALENEACETIC ACID; 77-06-5:
GIBBERELIC ACID

DESCRIPTORS:

MAJOR CONCEPTS: Chemical Coordination and Homeostasis; Development;
Methods and Techniques; Pharmacognosy (Pharmacology)

BIOSYSTEMATIC NAMES: Berberidaceae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: *Podophyllum peltatum* (Berberidaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: KINETIN; NAPHTHALENEACETIC ACID; GIBBERELIC
ACID

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Display 7/8,K/85 (Item 85 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

MISCELLANEOUS TERMS: Research Article; DIVIDED *EMBRYO* CULTURE;
EMBRYO CULTURE; GIBBERELIC ACID; IN VITRO PROPAGATION; KINETIN;
MEDICINAL PLANT; METHODOLOGY; NAA; NAPHTHALENEACETIC ACID;
PHARMACOGNOSY; PLANT GROWTH REGULATOR; TISSUE CULTURE METHOD

CONCEPT CODES:

32500 Tissue Culture, Apparatus, Methods and Media

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods

54000 Pharmacognosy and Pharmaceutical Botany

BIOSYSTEMATIC CODES:

25640 Berberidaceae

...ABSTRACT: NAA, 0.1 mg dm-3 zeatin and 0.2 mg dm-3 6-benzylaminopurine
resulted in a compact appearance of plantlets and a lower *germination*
rate. Divided *embryo* cultures produced plantlets via *somatic*

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Display 7/8,K/85 (Item 85 from file: 5)
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embryogenesis which occurred only on the 2,4-dichlorophenoxyacetic acid
containing media. The maturation of *somatic* embryos was observed on
media without any auxin.

MISCELLANEOUS TERMS: ...DIVIDED *EMBRYO* CULTURE...

...*EMBRYO* CULTURE

- end of record -

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Display 7/8,K/86 (Item 86 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11165913 BIOSIS NO.: 199799787058

Role of sucrose for the acquisition of tolerance to cryopreservation of carrot *somatic* embryos.

1997

REGISTRY NUMBERS: 57-50-1: SUCROSE

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Horticulture (Agriculture); Methods and Techniques

BIOSYSTEMATIC NAMES: Umbelliferae--Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: carrot (Umbelliferae); Daucus carota (Umbelliferae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants; spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: SUCROSE

MISCELLANEOUS TERMS: Research Article; CRYOPRESERVATION; CRYOPROTECTIVE

EFFICACY; FREEZING TOLERANCE; *GERMINATION* RATE; HORTICULTURE;

METHODOLOGY; PRESERVATION METHOD; *SOMATIC* *EMBRYO*; SUCROSE

-more-

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Display 7/8,K/86 (Item 86 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

CONCEPT CODES:

10060 Biochemical Studies-General

23001 Temperature: Its Measurement, Effects and Regulation-General
Measurement and Methods

53008 Horticulture-Vegetables

BIOSYSTEMATIC CODES:

26915 Umbelliferae

Role of sucrose for the acquisition of tolerance to cryopreservation of carrot *somatic* embryos.

ABSTRACT: The action of sucrose for the induction of freezing tolerance of carrot *somatic* embryos was investigated. The cryoprotective efficiency of various sugars, proline and penetrating agents (glycerol and dimethylsulfoxide) was evaluated relative to the protection afforded by sucrose. Raffinose, sorbitol and maltose like sucrose led to *germination* rates of 6080% after freezing for an optimal concentration of 0.3-0.4M. While we observe a rapid water loss of embryos (30% of the

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Display 7/8,K/86 (Item 86 from file: 5)

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initial water) in the first 15 min of pretreatment, *germination* rate is still low (about 20%). The *embryo* sucrose content strongly increased from 80 to 300 mg/g dw which can be linked in part with an increase in *germination* rates after freezing during the first-only 12h as confirmed by using pCMBS as sucrose transport inhibitor. The partial or complete replacement of sucrose by...

...that sucrose acts by a osmotic effect, its accumulation in the embryos and the induction of metabolic changes which together give a high level of *embryo* cryoprotection.

MISCELLANEOUS TERMS: ...*GERMINATION* RATE...

...*SOMATIC* *EMBRYO*;

- end of record -

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Display 7/8,K/87 (Item 87 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11164656 BIOSIS NO.: 199799785801

ABA content and lipid deposition in interior spruce *somatic* embryos.

1997

REGISTRY NUMBERS: 21293-29-8: DEXTRO-ABSCISIC ACID

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Chemical
Coordination and Homeostasis; Development; Forestry; Metabolism;
Reproduction

BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae;
Plantae-Unspecified--Plantae

ORGANISMS: plant (Plantae - Unspecified); spruce (Coniferopsida); Picea
engelmannii (Coniferopsida)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: DEXTRO-ABSCISIC ACID

MISCELLANEOUS TERMS: Research Article; ANALYTICAL METHOD; CHEMICAL
COORDINATION; CONTENT; DEXTRO-ABSCISIC ACID; ELISA; FORESTRY; INTERIOR

-more-

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Display 7/8,K/87 (Item 87 from file: 5)

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SPRUCE *SOMATIC* EMBRYOS; LIPID DEPOSITION; PLANT GROWTH REGULATOR;
PRECOCIOUS *GERMINATION*

CONCEPT CODES:

10066 Biochemical Studies-Lipids

13006 Metabolism-Lipids

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

51519 Plant Physiology, Biochemistry and Biophysics-Metabolism

53500 Forestry and Forest Products

BIOSYSTEMATIC CODES:

25102 Coniferopsida

ABA content and lipid deposition in interior spruce *somatic* embryos.

ABSTRACT: Interior spruce (Picea glauca engelmannii complex) *somatic*
embryos grown on 48 μ -mol (+)-ABA per L over a period of 42 d without

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Display 7/8,K/87 (Item 87 from file: 5)

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transfer underwent precocious *germination* by 49 d. Those transferred at
28 d to fresh medium with 48 μ -mol (+)-ABA continued *embryo*
development until harvested at 56 d; the transfer at 28 d resulted in an
increase in *embryo* lipid content after 42 d. *Somatic* embryos grown
under this condition contained 181.4 \pm 41.2, 116.0 \pm 42.4, and 91.8 \pm
33.6 ng (+)-ABA per mg of lyophilized...

...without the transfer at 28 d had 86.8 \pm 25.4 ng (+)-ABA per mg of
lyophilized tissue at 42 d, just prior to precocious *germination*. After
3 weeks' storage in a drying chamber under high humidity, the (+)-ABA
content of 56-d-old transferred embryos decreased to 15.4 \pm 4.4 ng
(+)-ABA per mg of lyophilized tissue. The increased lipid content
resulting from *embryo* transfer and the reduction in internal (+)-ABA
content during storage are factors which will contribute to improved
conversion of *somatic* embryos to plantlets.

MISCELLANEOUS TERMS: ...INTERIOR SPRUCE *SOMATIC* EMBRYOS...

...PRECOCIOUS *GERMINATION*

- end of record -

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Display 7/8,K/88 (Item 88 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11138986 BIOSIS NO.: 199799760131

Maturation of *somatic* embryos of Pinus strobus is promoted by a high concentration of gellan gum.

1997

REGISTRY NUMBERS: 71010-52-1: GELLAN GUM

DESCRIPTORS:

MAJOR CONCEPTS: Development; Methods and Techniques; Reproduction

BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae

ORGANISMS: Pinus strobus (Coniferopsida)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: GELLAN GUM

MISCELLANEOUS TERMS: Research Article; DEVELOPMENT; EASTERN WHITE PINE;

GEL STRENGTH; GELLAN GUM; PROPAGATION METHOD; *SOMATIC* *EMBRYO*

MATURATION; *SOMATIC* EMBRYOGENESIS; TISSUE CULTURE

CONCEPT CODES:

32500 Tissue Culture, Apparatus, Methods and Media

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Display 7/8,K/88 (Item 88 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods

BIOSYSTEMATIC CODES:

25102 Coniferopsida

Maturation of *somatic* embryos of Pinus strobus is promoted by a high concentration of gellan gum.

ABSTRACT: Application of *somatic* embryogenesis to Pinus strobus clonal propagation and genetic improvement was hampered by the difficulty in achieving synchronous maturation of a large number of *somatic* embryos that would germinate and produce plants. Media containing abscisic acid (80 μ -M) and osmotic agents such as sucrose, polyethylene glycol and/or dextran did not sustain development of mature *somatic* embryos from plated embryonal masses. This indicated that factors other than osmotic

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Display 7/8,K/88 (Item 88 from file: 5)

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agents might be involved in sustaining development of Pinus strobus *somatic* embryos to maturity. It was subsequently found that media lacking osmotica but containing a high concentration of gellan gum (1%) induced significant improvement in the development of mature *somatic* embryos in the presence of 80 or 120 μ -M abscisic acid. This positive effect was independent of the genotype and all four tested lines...

...the culture medium by 46% (SD 14) after 14 days of storage. Preliminary results showed that embryos matured on high gellan gum media displayed improved *germination* frequencies. These results indicate that in Pinus strobus the water status and possibly other medium characteristics that are influenced by increased concentration of gelling agent have stimulatory effects on maturation of *somatic* embryos.

MISCELLANEOUS TERMS: ...*SOMATIC* *EMBRYO* MATURATION...

...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/89 (Item 89 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11138859 BIOSIS NO.: 199799760004

A new technique for the propagation of *somatic* wheat embryos.
1997

REGISTRY NUMBERS: 1214-39-7: BENZYLAMINOPURINE

DESCRIPTORS:

MAJOR CONCEPTS: Agronomy (Agriculture); Biochemistry and Molecular
Biophysics; Cell Biology; Chemical Coordination and Homeostasis;
Development; Methods and Techniques; Morphology

BIOSYSTEMATIC NAMES: Gramineae--Monocotyledones, Angiospermae,
Spermatophyta, Plantae; Plantae-Unspecified--Plantae

ORGANISMS: plant (Plantae - Unspecified); wheat (Gramineae); Triticum
aestivum (Gramineae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; monocots; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: BENZYLAMINOPURINE

MISCELLANEOUS TERMS: Research Article; BENZYLAMINOPURINE; BIOBUSINESS;
BIOTECHNOLOGY; *EMBRYO*; *EMBRYO* *GERMINATION*; METHODOLOGY; PLANT

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Display 7/8,K/89 (Item 89 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

COLOR; PLANT REGENERATION; ROOT; ROOT DEVELOPMENT; *SOMATIC* *EMBRYO*
PROPAGATION

CONCEPT CODES:

02504 Cytology and Cytochemistry-Plant
10060 Biochemical Studies-General
10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
25508 Developmental Biology-Embryology-Morphogenesis, General
32500 Tissue Culture, Apparatus, Methods and Media
51000 Morphology, Anatomy and Embryology of Plants
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances
51522 Plant Physiology, Biochemistry and Biophysics-Chemical
Constituents
51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods
52504 Agronomy-Grain Crops

BIOSYSTEMATIC CODES:

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Display 7/8,K/89 (Item 89 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

25305 Gramineae

A new technique for the propagation of *somatic* wheat embryos.

ABSTRACT: The modified Murashige & Skoog liquid medium supplemented with 5
mg benzylaminopurine l-1 induced *germination* of *somatic* embryos when
using filter paper support. A similar agarose-solidified medium did not
induce *germination* of *somatic* embryos. Plant regeneration was higher
in the leaf rust susceptible wheat cultivar, Palmiet, than in the near
isogenic resistant line, PalmietLr34. These plants were green...

- end of record -

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Display 7/8,K/89 (Item 89 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

MISCELLANEOUS TERMS: ...*EMBRYO*; *EMBRYO* *GERMINATION*; ...

...*SOMATIC* *EMBRYO* PROPAGATION

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Display 7/8,K/90 (Item 90 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11086042 BIOSIS NO.: 199799707187

Homologous *embryo* lethal mutant in rice.

1997

DESCRIPTORS:

MAJOR CONCEPTS: Agronomy (Agriculture); Genetics; Morphology
BIOSYSTEMATIC NAMES: Gramineae--Monocotyledones, Angiospermae,
Spermatophyta, Plantae
ORGANISMS: rice (Gramineae); Oryza sativa (Gramineae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; monocots; plants;
spermatophytes; vascular plants
MISCELLANEOUS TERMS: Research Article; BREEDING; DEVELOPMENT; *EMBRYO*;
EMBRYO-LETHAL MUTANT; GENETICS; INDICA; RECESSIVE GENE; SEED

CONCEPT CODES:

03504 Genetics and Cytogenetics-Plant
51000 Morphology, Anatomy and Embryology of Plants
52504 Agronomy-Grain Crops

BIOSYSTEMATIC CODES:

-more-

?

Display 7/8,K/90 (Item 90 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
25305 Gramineae

Homologous *embryo* lethal mutant in rice.

ABSTRACT: By using suspension culture, in which the liquid medium contained the chemical mutagen ethyl methanesulfonate (EMS), four *embryo*-lethal mutants in indica rice were obtained. In the R-2 generation, homozygous *embryo*-lethal mutants were segregated and their seeds lost the ability for *germination*. The calli were induced from the seeds of the mutant on MS medium with 2,4-D, and subsequently plantlets of the homozygous *embryo*-lethal (HEL) mutant were successfully regenerated. These homozygous mutants grown up to mature stage and set seeds, except that their seeds did not germinate. All characters of the homozygous mutants were normal as wild type. As we know, this is the first sample of *embryo*-lethal mutant which in homozygous state could grow up to mature stage at least in rice. Seed *germination* in hybrid F-1 (HEL mutant/normal rice) was normal and in hybrid F-2 or R-2, the segregation ratios in seed *germination* were in accord with 3 *germination*: 1

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Display 7/8,K/90 (Item 90 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

nongermination, showing that the mutants were controlled by single recessive gene. Histological and cytological studies revealed that the stages of *embryo* degeneration in different mutants were various. In mutant EL 44-1 *embryo* degeneration at globular stage and double embryos in a *embryo* sac were observed. In mutant EL 44-2, the embryos only possessed ill-developed coleoptile, no in mutant 961, the mature embryos possessed root and...

...coleoptile developed well but no shoot differentiated. In mutant EL 144, the embryos developed into mature stage, with shoot poorly differentiated. In some cases, the *embryo* developed well in structure, vascular bundles or with ill-developed ones with out between their shoot and root. The authors suggest that the mutants might be useful in hybrid rice production by one line method (fixing the heterosis) based on apomixis in the future. In this system, the homozygous *embryo*-lethal mutants could provide endosperm to the apomictic *embryo* which might be

produced from heterozygous *somatic* tissues of the hybrid rice.
MISCELLANEOUS TERMS: ...*EMBRYO*; *EMBRYO*-LETHAL MUTANT

- end of record -

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Display 7/8,K/91 (Item 91 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11037442 BIOSIS NO.: 199799658587

**The isolation of a novel metallothionein-related cDNA expressed in
somatic and zygotic embryos of Douglas-fir: Regulation by ABA,
osmoticum, and metal ions.**

1997

REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID; 25322-68-3: POLYETHYLENEGLYCOL
; 7440-43-9: CADMIUM; 7440-66-6: ZINC; 7440-50-8: COPPER; 7439-96-5:
MANGANESE; 7429-90-5: ALUMINUM; 7440-48-4: COBALT; 7439-97-6: MERCURY

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Chemical
Coordination and Homeostasis; Genetics

BIOSYSTEMATIC NAMES: Actinidiaceae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae; Coniferopsida--Gymnospermae, Spermatophyta,
Plantae; Cruciferae--Dicotyledones, Angiospermae, Spermatophyta,
Plantae; Gramineae--Monocotyledones, Angiospermae, Spermatophyta,
Plantae

ORGANISMS: kiwifruit (Actinidiaceae); rice (Gramineae); Arabidopsis

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Display 7/8,K/91 (Item 91 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
(Cruciferae); Douglas-fir (Coniferopsida); Pseudotsuga menziesii
(Coniferopsida)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots;
gymnosperms; monocots; plants; spermatophytes; vascular plants
CHEMICALS & BIOCHEMICALS: ABSCISIC ACID; POLYETHYLENEGLYCOL; CADMIUM;
ZINC; COPPER; MANGANESE; ALUMINUM; COBALT; MERCURY
MOLECULAR SEQUENCE DATABANK NUMBER: amino acid sequence; nucleotide
sequence
MISCELLANEOUS TERMS: Research Article; ABA; ABSCISIC ACID; ALUMINUM;
CADMIUM; CDNA; CHEMICAL COORDINATION; COBALT; COMPLEMENTARY DNA; COPPER
; MANGANESE; MERCURY; METALLOTHIONEIN; MOLECULAR GENETICS; OSMOTICUM;
PEG; PLANT GROWTH REGULATOR; POLYETHYLENEGLYCOL; U55051; ZINC; ZYGOTIC
EMBRYO

CONCEPT CODES:

03504 Genetics and Cytogenetics-Plant
10062 Biochemical Studies-Nucleic Acids, Purines and Pyrimidines
10064 Biochemical Studies-Proteins, Peptides and Amino Acids
10069 Biochemical Studies-Minerals

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Display 7/8,K/91 (Item 91 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
10506 Biophysics-Molecular Properties and Macromolecules
51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances
BIOSYSTEMATIC CODES:
25102 Coniferopsida
25305 Gramineae
25525 Actinidiaceae
25880 Cruciferae

**The isolation of a novel metallothionein-related cDNA expressed in
somatic and zygotic embryos of Douglas-fir: Regulation by ABA,
osmoticum, and metal ions.**

...ABSTRACT: from Arabidopsis (OEST), rice (AEST) and kiwifruit (ADI),

which do not belong to type 1 or 2. The PM 2.1 gene was expressed in *somatic* and zygotic embryos, in haploid maternal tissue, as well as in hormone- and metal-treated seeds and seedlings. The PM 2.1 transcripts were detected...

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Display 7/8,K/91 (Item 91 from file: 5)
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...modulated by metals, suggesting a role of the PM 2.1 gene product in the control of microelement availability during Douglas-fir seed development and *germination*. The novel structural features, and the developmental, hormonal and metal modulation of PM 2.1 expression, are evidence for a new type of MT-related...

- end of record -

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Display 7/8,K/91 (Item 91 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
MISCELLANEOUS TERMS: ...ZYGOTIC *EMBRYO*

- end of record -

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Display 7/8,K/92 (Item 92 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
11028563 BIOSIS NO.: 199799649708
Improvement of the maturation and *germination* of horse chestnut *somatic* embryos.
1997
REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID; 25322-68-3: POLYETHYLENE GLYCOL
DESCRIPTORS:
MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Chemical Coordination and Homeostasis; Development; Methods and Techniques; Physiology; Reproduction
BIOSYSTEMATIC NAMES: Hippocastanaceae--Dicotyledones, Angiospermae, Spermatophyta, Plantae
ORGANISMS: horse chestnut (Hippocastanaceae); Aesculus hippocastanum (Hippocastanaceae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants; spermatophytes; vascular plants
CHEMICALS & BIOCHEMICALS: ABSCISIC ACID; POLYETHYLENE GLYCOL

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Display 7/8,K/92 (Item 92 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
MISCELLANEOUS TERMS: Research Article; ABSCISIC ACID; DESICCATION; DEVELOPMENT; METHODOLOGY; POLYETHYLENE GLYCOL; PROPAGATION METHOD; *SOMATIC* *EMBRYO* *GERMINATION*; *SOMATIC* *EMBRYO* MATURATION; TISSUE CULTURE
CONCEPT CODES:
10011 Biochemistry-Physiological Water Studies (1970-)
32500 Tissue Culture, Apparatus, Methods and Media
51502 Plant Physiology, Biochemistry and Biophysics-Water Relations
51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances
51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and Methods
BIOSYSTEMATIC CODES:
26170 Hippocastanaceae

Improvement of the maturation and *germination* of horse chestnut *somatic*

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Display 7/8,K/92 (Item 92 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
embryos.

...ABSTRACT: of horse chestnut (*Aesculum hippocastanum* L.) were cultured on maturation media supplemented with different combinations of abscisic acid, polyethylene glycol 4000, mannitol or activated charcoal. *Somatic* embryos were subjected to different desiccation procedures after a culture period on maturation media. After a slow desiccation, obtained by placing the *somatic* embryos in empty and non-sealed Petri dishes under the laminar air flow for 48 h, an increase in viability, shoot elongation and conversion was...

- end of record -

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Display 7/8,K/92 (Item 92 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
MISCELLANEOUS TERMS: ...*SOMATIC* *EMBRYO* *GERMINATION*; *SOMATIC*
EMBRYO MATURATION

- end of record -

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Display 7/8,K/93 (Item 93 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11023534 BIOSIS NO.: 199799644679

Improvement of *somatic* embryogenesis in *Hevea brasiliensis* (Mull. Arg.)
using the temporary immersion technique.

1997

DESCRIPTORS:

MAJOR CONCEPTS: Development; Horticulture (Agriculture); Methods and
Techniques; Reproduction

BIOSYSTEMATIC NAMES: Euphorbiaceae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: *Hevea brasiliensis* (Euphorbiaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

MISCELLANEOUS TERMS: Research Article; AGRONOMY; METHODOLOGY; PLANT
REGENERATION; *SOMATIC* EMBRYOGENESIS IMPROVEMENT; TEMPORARY IMMERSION
TECHNIQUE

CONCEPT CODES:

32500 Tissue Culture, Apparatus, Methods and Media

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Display 7/8,K/93 (Item 93 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods
53004 Horticulture-Tropical and Subtropical Fruits and Nuts; Plantation
Crops
BIOSYSTEMATIC CODES:
26055 Euphorbiaceae

Improvement of *somatic* embryogenesis in *Hevea brasiliensis* (Mull. Arg.)
using the temporary immersion technique.

ABSTRACT: A culture procedure using temporary immersion in a liquid medium
was tested for *somatic* embryogenesis of *Hevea brasiliensis* (Mull.
Arg.). Embryogenic callus was placed under regeneration conditions,

either on a gelled medium (Phytigel, Sigma, St. Louis, MO) or in a container designed for temporary immersion. The latter technique has some

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Display 7/8,K/93 (Item 93 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
advantages over the use of a gelled medium during both the early steps of *somatic* embryogenesis, i.e., *embryo* development, and later on, i.e., during maturation, desiccation and *germination*. *Somatic* *embryo* production in a liquid medium was three to four times greater than on a semi-solid medium: 400 embryos/g fresh weight under the best embryogenesis induction conditions. *Somatic* embryogenesis had to be initiated on a gelled medium before the embryogenic callus was transferred to temporary immersion, and the amounts of 3,4-dichlorophenoxyacetic acid and N-6-benzyladenine had to be reduced. Temporary immersion resulted in substantially more consistent, synchronized *somatic* *embryo* development, reducing the number of abnormal embryos by half and stimulating *germination*. All of the late events could be carried out in the temporary immersion container. Effective drying conditions were achieved after 12 wk without immersion and without selection of the embryos. Temporary immersion during *germination* greatly stimulated root development (+60%) and epicotyl emergency (+35%), combined with increased synchronization and a substantially reduced workload.

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Display 7/8,K/93 (Item 93 from file: 5)

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MISCELLANEOUS TERMS: ...*SOMATIC* EMBRYOGENESIS IMPROVEMENT

- end of record -

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Display 7/8,K/94 (Item 94 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

11022146 BIOSIS NO.: 199799643291

Larix laricina (Tamarack): *Somatic* embryogenesis and genetic transformation.

1997

DESCRIPTORS:

MAJOR CONCEPTS: Development; Forestry; Genetics; Methods and Techniques

BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae

ORGANISMS: tamarack (Coniferopsida); Larix laricina (Coniferopsida)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants;

spermatophytes; vascular plants

MISCELLANEOUS TERMS: Research Article; DEVELOPMENT; FORESTRY; GENETIC TRANSFORMATION; GENETICS; PROPAGATION METHOD; *SOMATIC* EMBRYOGENESIS; TISSUE CULTURE

CONCEPT CODES:

03504 Genetics and Cytogenetics-Plant

32500 Tissue Culture, Apparatus, Methods and Media

51510 Plant Physiology, Biochemistry and Biophysics-Growth,

-more-

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Display 7/8,K/94 (Item 94 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

Differentiation

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and Methods

53500 Forestry and Forest Products

BIOSYSTEMATIC CODES:

25102 Coniferopsida

Larix laricina (Tamarack): *Somatic* embryogenesis and genetic transformation.

...ABSTRACT: embryonal masses were maintained for 1 year by biweekly subcultures prior to the maturation experiments. All of these lines showed the ability to produce mature *somatic* embryos. Both elevated medium osmolality (315.0-543.6 mmol cntdot kg-1) and presence of abscisic acid (ABA) at 40 mu-M stimulated the...

...0.4 M, and polyethylene glycol (PEG) at 5 or 10% was effective only in combination with 0.2 or 0.4 M sucrose. The *germination* frequency of

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Display 7/8,K/94 (Item 94 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

somatic embryos depended on both osmolality and ABA concentration in the maturation medium. Over 90% of mature *somatic* embryos were capable of secondary *somatic* embryogenesis when placed on the induction medium. This particular ability was exploited in order to achieve genetic transformation. Four vectors were delivered to the embryonal masses and *somatic* *embryo* cells via bombardment of DNA-coated gold particles. The vectors pBI426 and pRT99gus carried a gene encoding resistance to kanamycin, pRT66gus to hygromycin, and pRT55gus...

- end of record -

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Display 7/8,K/94 (Item 94 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

MISCELLANEOUS TERMS: ...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/95 (Item 95 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10990127 BIOSIS NO.: 199799611272

An improved method for embling production in pistachio, Pistacia vera L. using.

1997

REGISTRY NUMBERS: 1214-39-7: BENZYLAMINOPURINE; 21293-29-8: ABSCISIC ACID; 57-50-1: SUCROSE

DESCRIPTORS:

MAJOR CONCEPTS: Development; Horticulture (Agriculture); Morphology; Reproduction

BIOSYSTEMATIC NAMES: Anacardiaceae--Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: pistachio (Anacardiaceae); Pistacia vera (Anacardiaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants; spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: BENZYLAMINOPURINE; ABSCISIC ACID; SUCROSE

MISCELLANEOUS TERMS: Research Article; ABSCISIC ACID; BENZYLAMINOPURINE; EMBLING DEVELOPMENT; EMBLINGS; *EMBRYO*; EMBRYOGENESIS; *GERMINATION*

-more-

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Display 7/8,K/95 (Item 95 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

; HORTICULTURE; MATURATION; MICROPROPAGATION; PLANT GROWTH REGULATION; SUCROSE

CONCEPT CODES:

51000 Morphology, Anatomy and Embryology of Plants

51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

53004 Horticulture-Tropical and Subtropical Fruits and Nuts; Plantation

Crops
BIOSYSTEMATIC CODES:
25565 Anacardiaceae

ABSTRACT: Benzylaminopurine (BAP) and racemic (+-) abscisic acid (ABA) together with sucrose were tested for their ability to affect the maturation, *germination* and embling development of *somatic* embryos of the pistachio. The number of matured *somatic* embryos was found to be influenced significantly by concentrations of BAP, ABA and sucrose in the liquid maturation medium. The maturation of *somatic* embryos (SEs) was

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Display 7/8,K/95 (Item 95 from file: 5)

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best achieved with a low concentration (i.e. 0.5 mg l-1) of ABA, BAP, and plant-growth regulator-free liquid Murashige and Skoog (MS) medium. The duration of the *embryo* maturation treatment, the duration of the culture for *germination* and embling development, and the concentrations of ABA and BAP during *germination* and embling development also produced significant effects. *Germination* probabilities varied from 0.59 to 0.33 and 0.50 to 0.26 with BAP and ABA, respectively. The frequency of *germination* (0.62) was highest with the plant-growth regulator-free (PGR-free) control treatment and lowest (0.26) with 2 mg l-1 ABA. Under the same *germination* conditions, embling probabilities varied from 0.45 to 0.27 and 0.24 to 0.13 with BAP and ABA, respectively. The frequency of developed...

- end of record -

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Display 7/8,K/95 (Item 95 from file: 5)

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MISCELLANEOUS TERMS: ...*EMBRYO*; ...

...*GERMINATION*;

- end of record -

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Display 7/8,K/96 (Item 96 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10979500 BIOSIS NO.: 199799600645

Suspension culture, *somatic* embryogenesis and stable regeneration in *Asparagus cooperi* Baker.

1996

DESCRIPTORS:

MAJOR CONCEPTS: Development; Morphology

BIOSYSTEMATIC NAMES: Liliaceae--Monocotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: *Asparagus cooperi* (Liliaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; monocots; plants; spermatophytes; vascular plants

MISCELLANEOUS TERMS: Research Article; DEVELOPMENT; *EMBRYO*;

GERMINATION; INDUCTION; MAINTENANCE; REGENERATION; *SOMATIC*

EMBRYOGENESIS; SUSPENSION CULTURE

CONCEPT CODES:

51000 Morphology, Anatomy and Embryology of Plants

51510 Plant Physiology, Biochemistry and Biophysics-Growth,

-more-

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Display 7/8,K/96 (Item 96 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

Differentiation

BIOSYSTEMATIC CODES:

25345 Liliaceae

**Suspension culture, *somatic* embryogenesis and stable regeneration in
Asparagus cooperi Baker.**

...ABSTRACT: 1-1 kinetin (Kn). A subculturing interval enhanced the formation of embryogenic clumps, and several nitrogenous compounds effectively accelerated the growth rate of such clumps. *Embryo* development was achieved by transferring embryogenic cell clusters to MS solid medium containing 1 mg 1-1 NAA, 1 mg 1-1 Kn and 0...

- end of record -

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Display 7/8,K/96 (Item 96 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
MISCELLANEOUS TERMS: ...*EMBRYO*; *GERMINATION*; ...

...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/97 (Item 97 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10979486 BIOSIS NO.: 199799600631

**Normalization of asparagus *somatic* embryogenesis using a
maltose-containing medium.**

1997

REGISTRY NUMBERS: 69-79-4: MALTOSE; 94-75-7: 2 4-D; 57-50-1: SUCROSE;
71010-52-1: GELLAN GUM

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Chemical
Coordination and Homeostasis; Development; Methods and Techniques;
Reproduction

BIOSYSTEMATIC NAMES: Liliaceae--Monocotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: asparagus (Liliaceae); Asparagus officinalis (Liliaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; monocots; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: MALTOSE; 2,4-D; SUCROSE; GELLAN GUM

MISCELLANEOUS TERMS: Research Article; DEVELOPMENT; EQUIPMENT; GELLAN

-more-

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Display 7/8,K/97 (Item 97 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
GUM; MALTOSE; MEDIUM COMPOSITION; MURASHIGE AND SKOOG MEDIUM;
PROPAGATION METHOD; *SOMATIC* EMBRYOGENESIS; SUCROSE; TISSUE CULTURE;
2,4-D

CONCEPT CODES:

10068 Biochemical Studies-Carbohydrates

32500 Tissue Culture, Apparatus, Methods and Media

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods

BIOSYSTEMATIC CODES:

25345 Liliaceae

**Normalization of asparagus *somatic* embryogenesis using a
maltose-containing medium.**

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Display 7/8,K/97 (Item 97 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

...ABSTRACT: were cultured and maintained on Murashige and Skoog. (MS) medium containing 2 mg/L 2,4-D, 3% sucrose and 0.2% gellan gum. Normal *somatic* embryos were induced from the embryogenic calli by pretreating with 1/2 MS liquid medium for 7 days, sieving through 600 mu-m stainless steel...

...a high concentration of gellan gum (1.0% w/v) for 1 week. Furthermore, use of maltose as a sugar and/or osmoticum in the *embryo* induction medium promoted development of norma *somatic* embryos. Using these methods, non-vitrified bipolar embryos were induced 30 days after transfer (approximately 1,500 embryos per 0.1 mL packed cell volume). The *somatic* embryos induced on maltose-containing medium exhibited a much higher *germination* rate (more than 80%) with cold treatment (14 days at 4 degree C) than that induced on sucrose-containing medium.

MISCELLANEOUS TERMS: ...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/98 (Item 98 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10973120 BIOSIS NO.: 199799594265

***Somatic* *embryo* maturation and plant regeneration in Abies nordmanniana Lk.**

1997

REGISTRY NUMBERS: 69-79-4: MALTOSE; 50-99-7: GLUCOSE

DESCRIPTORS:

MAJOR CONCEPTS: Development; Forestry; Horticulture (Agriculture);

Methods and Techniques; Reproduction

BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae

ORGANISMS: Abies nordmanniana (Coniferopsida)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants; spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: MALTOSE; GLUCOSE

MISCELLANEOUS TERMS: Research Article; FORESTRY; GLUCOSE; HORTICULTURE;

MALTOSE; METHODOLOGY; PLANT REGENERATION; PROPAGATION METHOD; *SOMATIC*

EMBRYO MATURATION; *SOMATIC* EMBRYOGENESIS

CONCEPT CODES:

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Display 7/8,K/98 (Item 98 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

32500 Tissue Culture, Apparatus, Methods and Media

51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and Methods

53010 Horticulture-Flowers and Ornamentals

53500 Forestry and Forest Products

BIOSYSTEMATIC CODES:

25102 Coniferopsida

***Somatic* *embryo* maturation and plant regeneration in Abies nordmanniana Lk.**

ABSTRACT: The effect of maltose and sucrose at 1, 3 or 6% (w/v) on maturation of *somatic* embryos of the conifer Abies nordmanniana was studied in five different cell lines. At all concentrations tested, maltose was superior to sucrose in terms of the number of mature

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Display 7/8,K/98 (Item 98 from file: 5)

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somatic embryos formed as well as their *germination* percentage. Optimum maltose concentrations varied between 3.4 and 4.3% based on quadratic regression analysis. Mixtures of maltose and sucrose were not found to produce as good results as pure maltose. The addition of polyethylene glycol-4000 (PEG-4000) to medium with 3% maltose further increased the yield of *somatic* embryos. The promotive effect of PEG-4000 was mainly exerted during the formation precotyledonary embryos. Germinated plants were hardened, established in soil and they resumed...

- end of record -

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Display 7/8,K/98 (Item 98 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

MISCELLANEOUS TERMS: ...*SOMATIC* *EMBRYO* MATURATION...

...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/99 (Item 99 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10973115 BIOSIS NO.: 199799594260

Sucrose requirements and lipid utilization during *germination* of interior spruce (*Picea glauca engelmannii* complex) *somatic* embryos.

1997

REGISTRY NUMBERS: 57-50-1: SUCROSE

DESCRIPTORS:

MAJOR CONCEPTS: Development; Forestry; Methods and Techniques

BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae

ORGANISMS: *Picea engelmannii* (Coniferopsida); *Picea glauca*

(Coniferopsida); *Picea glauca engelmannii* (Coniferopsida)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants;

spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: SUCROSE

MISCELLANEOUS TERMS: Research Article; CULTURE METHOD; *EMBRYO*

CULTURES; FORESTRY; INTERIOR SPRUCE; LIPID UTILIZATION; METHODOLOGY;

SOMATIC *EMBRYO* *GERMINATION*; SPECIES COMPLEX; SUCROSE REQUIREMENTS

CONCEPT CODES:

-more-

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Display 7/8,K/99 (Item 99 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

32500 Tissue Culture, Apparatus, Methods and Media

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods

53500 Forestry and Forest Products

BIOSYSTEMATIC CODES:

25102 Coniferopsida

Sucrose requirements and lipid utilization during *germination* of interior spruce (*Picea glauca engelmannii* complex) *somatic* embryos.

ABSTRACT: Both *somatic* and excised zygotic embryos of interior spruce (*Picea glauca engelmannii* complex) required exogenous sucrose in the medium for *germination* in vitro. Over a period of 29 days on sucrose-containing medium germinants with roots and epicotyls developed from both kinds of *embryo*, and their content of linolenic acid (9,12,15-18:3) increased about six- to eightfold. Without added sucrose,

-more-

?

proton and carbon-13)
IT 29477-83-6
RL: BIOL (Biological study)
(of Sternbergia lutea, proton and carbon-13-NMR spectra of)

L1 ANSWER 113 OF 284 CAPLUS COPYRIGHT 2001 ACS
AN 1991:425411 CAPLUS
DN 115:25411
TI Rapid identification of cytokinins by an immunological method
AU Morris, Roy O.; Jameson, Paula E.; Laloue, Michel; Morris, John W.
CS Dep. Biochem., Univ. Missouri, Columbia, MO, 65211, USA
SO Plant Physiol. (1991), 95(4), 1156-61
CODEN: PLPHAY; ISSN: 0032-0889
DT Journal
LA English
CC 9-10 (Biochemical Methods)
Section cross-reference(s): 10

AB A method for rapid identification of bacterial cytokinins was developed in which cultures are fed [3H]adenine, the cytokinins (including 3H-labeled cytokinins) are isolated by immunoaffinity chromatog. and analyzed by HPLC with online scintillation counting. Anal. of Agrobacterium tumefaciens strains showed that some produced primarily trans-zeatin, whereas others produced primarily trans-zeatin riboside. Pseudomonas syringae savastanoi produced mixts. of trans-zeatin, dihydrozeatin, 1''-methyl-trans-zeatin riboside, and other unknown cytokinin-like substances. **Corynebacterium fascians** produced cis-zeatin, isopentenyladenine, and isopentenyladenosine. The technique is designed for qual. rather than quant. studies and allows ready identification of bacterial cytokinins. It may also have utility in the study of plant cytokinins if adequate incorporation of label into cytokinin precursor pools can be achieved.

ST bacteria cytokinin detection immunoaffinity chromatog
IT Bacteria
(cytokinins of, detection of, by immunoaffinity chromatog.)

IT Plant hormones and regulators
RL: ANT (Analyte); ANST (Analytical study)
(cytokinins, detection of, of bacteria by immunoaffinity chromatog.)

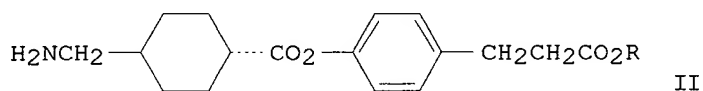
IT Immunochemical analysis
(immunoabsorption chromatog., cytokinins detection by, in bacteria)

L1 ANSWER 114 OF 284 CAPLUS COPYRIGHT 2001 ACS
AN 1991:4887 CAPLUS
DN 114:4887
TI Microbial manufacture of cyclohexanecarboxylic acids
IN Kuroda, Hiroki; Miyadera, Akihiko; Suzuki, Akio
PA Daiichi Seiyaku Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C12P013-00
ICA C07C229-46
ICI C12P013-00, C12R001-39, C12R001-38, C12R001-365, C12R001-22, C12R001-37, C12R001-01, C12R001-265, C12R001-06, C12R001-43, C12R001-15, C12R001-465, C12R001-03
CC 16-2 (Fermentation and Bioindustrial Chemistry)
Section cross-reference(s): 63

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	JP 02190191	A2	19900726	JP 1989-8148	19890117
	JP 2783823	B2	19980806		
OS	MARPAT 114:4887				
GI					

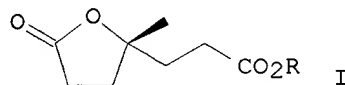


- AB trans-4-Aminomethylcyclohexanecarboxylic acid 4'-(2''-carboxyethyl)phenyl ester (I), useful for treatment of gastritis and gastric ulcer and as a plasmin inhibitor, and its salts are manufd. by treating esters II [R = lower alkyl, (substituted) benzyl or Ph] or their salts with *Pseudomonas*, *Nocardia*, *Klebsiella*, *Proteus*, *Aerococcus*, *Sphingobacterium*, *Xanthobacter*, *Morganella*, *Kluyvera*, *Mycobacterium*, *Micrococcus*, *Azospirillum*, *Enterobacter*, *Arthrobacter*, *Serratia*, *Corynebacterium*, *Streptomyces*, *Pseudonocardia*, *Actinomadura*, *Actinoplanes*, *Dactylosporangium*, their culture media, or exts. from them. *Pseudomonas schuylkilliensis* IAM 1126 was cultured in a medium contg. meat ext., peptone, and NaCl at 30.degree. for 1 day, centrifuged, and dried. trans-II.HCl (R = Me) in H2O was incubated with the bacteria at 30.degree. for 15 h to produce 99.5% I, which was isolated as HCl salt with 97.4% yield.
- ST cyclohexanecarboxylate manuf microbe; gastritis treatment
cyclohexanecarboxylate microbe manuf; plasmin inhibitor
cyclohexanecarboxylate microbe manuf
- IT Ulcer inhibitors
((carboxyethyl)phenyl cyclohexanecarboxylate manuf. using bacteria as)
- IT Actinomadura
Actinoplanes
Aerococcus
Aerococcus viscosus
Arthrobacter
Arthrobacter citreus
Azospirillum
Azospirillum brasilense
Corynebacterium
Corynebacterium fascians
Dactylosporangium
Enterobacter
Enterobacter aerogenes
Klebsiella
Klebsiella oxytoca
Klebsiella pneumoniae
Kluyvera
Kluyvera ascorbata
Micrococcus
Micrococcus luteus
Mycobacterium
Mycobacterium rhodochrous
Nocardia
Nocardia blackwellii
Nocardia erythropolis
Nocardia rubra
Proteus (bacterium)
Proteus morganii

Proteus vulgaris
 Pseudomonas
 Pseudomonas fluorescens
 Pseudomonas schuylkilliensis
 Pseudonocardia
 Pseudonocardia thermophila
 Serratia
 Serratia marcescens
 Sphingobacterium
 Sphingobacterium spiritivorum
 Streptomyces
 Streptomyces cattleya
 Xanthobacter
 Xanthobacter autotrophicus
 (cyclohexanecarboxylic acids manuf. with)
 IT Stomach, disease or disorder
 (gastritis, treatment of, (carboxyethyl)phenyl cyclohexanecarboxylate
 manuf. with bacteria for)
 IT 9001-90-5, Plasmin
 RL: BIOL (Biological study)
 (inhibitor for, (carboxyethyl)phenyl cyclohexanecarboxylate from
 microbes as)
 IT 27725-13-9 63667-43-6 114591-66-1 114591-67-2
 RL: RCT (Reactant)
 (microbial hydrolysis of, in manuf. cyclohexane carboxylate esters for
 gastritis and ulcer therapeutics)
 IT 130975-48-3P 130975-49-4P
 RL: PREP (Preparation)
 (microbial manuf. of, for treatment of gastritis and gastric ulcer and
 as antiplasmin agent)

 L1 ANSWER 115 OF 284 CAPLUS COPYRIGHT 2001 ACS
 AN 1989:552185 CAPLUS
 DN 111:152185
 TI Enzymic manufacture of (R)-(+)-.gamma.-butyrolactone-.gamma.-3-propionic
 acid
 IN Moriuchi, Fumio; Muroi, Hisae; Yano, Yasushi
 PA Arakawa Chemical Industries, Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 7 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C12P017-04
 ICI C12P017-04, C12R001-01; C12P017-04, C12R001-20; C12P017-04, C12R001-38;
 C12P017-04, C12R001-07; C12P017-04, C12R001-15
 CC 16-5 (Fermentation and Bioindustrial Chemistry)
 Section cross-reference(s): 62
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 01063386	A2	19890309	JP 1987-218705	19870901
	JP 07051072	B4	19950605		
OS	MARPAT 111:152185				
GI					



AB The title compd. I (R=H) (II), useful as an intermediate for physiol. active substances and perfumes, is manufd. by treatment of I [R = Cl-4 alkyl (except for Me3C)] with Chromobacterium, Flavobacterium, Pseudomonas, Bacillus, and Corynebacterium, their culture media, or pig liver esterase. Saccharomyces cerevisiae IFO 2044 was cultured in a medium contg. 4-oxopimelic acid monoethyl ester, sucrose, and salts at 30.degree. for 72 h to produce 54.0% I (R = Et) (100% optical purity), which was treated with pig liver esterase in 0.2M phosphate buffer at 30.degree. for 2 h to manuf. II. Seventy-five percent of I was converted to II.

ST butyrolactonepropionate manuf pig liver esterase; perfume intermediate butyrolactonepropionate esterase; Chromobacterium butyrolactonepropionate manuf; Flavobacterium butyrolactonepropionate manuf; Pseudomonas butyrolactonepropionate manuf; Bacillus butyrolactonepropionate manuf; Corynebacterium butyrolactonepropionate manuf

IT Perfumes and Essences
(butyrolactonepropionic acid manuf. for)

IT Bacillus
Bacillus pumilus
Chromobacterium
Chromobacterium chocolatum
Corynebacterium
Corynebacterium fascians
Flavobacterium
Flavobacterium lutescens
Pseudomonas
Pseudomonas diminuta
(butyrolactonepropionic acid manuf. with, by hydrolysis)

IT Fermentation
(butyrolactonepropionic acid, with bacteria)

IT 86488-11-1, 4-Oxopimelic acid monomethyl ester 116355-46-5, 4-Oxopimelic acid monoethyl ester 116355-47-6, 4-Oxopimelic acid monopropyl ester 116355-48-7, 4-Oxopimelic acid monobutyl ester
RL: BIOL (Biological study)
(butyrolactonepropionate ester from, by fermn.)

IT 99438-12-7 111044-02-1 111044-03-2 111070-69-0
RL: BIOL (Biological study)
(butyrolactonepropionic acid manuf. from, with esterase or bacteria)

IT 9013-79-0, Esterase
RL: BIOL (Biological study)
(butyrolactonepropionic acid manuf. with, of pig liver)

IT 98611-86-0P
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(manuf. of, with esterase or bacteria, by hydrolysis of esters)

L1 ANSWER 116 OF 284 CAPLUS COPYRIGHT 2001 ACS
AN 1989:532609 CAPLUS
DN 111:132609
TI Fermentative or enzymic manufacture of mono-tert-butyl 4-oxopimelic acid
IN Moriuchi, Fumio; Muroi, Hisae
PA Arakawa Chemical Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF

DT Patent
LA Japanese
IC ICM C12P007-62
ICI C12P007-62, C12R001-025; C12P007-62, C12R001-38; C12P007-62, C12R001-07;

C12P007-62, C12R001-15; C12P007-62, C12R001-01
CC 16-5 (Fermentation and Bioindustrial Chemistry)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 01010993	A2	19890113	JP 1987-166121	19870702
OS	MARPAT 111:132609				
AB	The title compd. (I) is manufd. by treatment of $RO_2C(CH_2)_2CO(CH_2)_2CO_2CMe_3$ (R = C1-4 alkyl, except for CMe ₃) with cultures or cells of <i>Achromobacter</i> , <i>Chromobacterium</i> , <i>Flavobacterium</i> , <i>Pseudomonas</i> , <i>Bacillus</i> , and <i>Corynebacterium</i> sp. or pig liver esterase. <i>P. diminuta</i> IFO 13181 was shake-cultured in an agar medium contg. meat ext., peptone, and salts at 30.degree. for 24 h, shake-cultured in a similar soln. medium at 30.degree. for 24 h, centrifuged, and the bacteria were treated with Me tert-Bu 4-oxopimelate in 0.2M Tris buffer at 30.degree. for 72 h to produce 86% I.				
ST	oxopimelate manuf bacteria esterase; <i>Pseudomonas</i> monobutyl oxopimelate manuf				
IT	Swine (esterase from liver of, monobutyl oxopimelate manuf. with, from oxopimelic acid diester)				
IT	Liver, composition (esterase, from pig, monobutyl oxopimelate manuf. with, from oxopimelic acid diester)				
IT	<i>Achromobacter</i> <i>Achromobacter</i> lyticus <i>Bacillus</i> <i>Bacillus</i> pumilus <i>Chromobacterium</i> <i>Chromobacterium</i> chocolatum <i>Corynebacterium</i> <i>Corynebacterium fascians</i> <i>Flavobacterium</i> <i>Flavobacterium</i> lutescens <i>Pseudomonas</i> <i>Pseudomonas</i> diminuta (monobutyl oxopimelate manuf. with, from oxopimelic acid diesters)				
IT	Fermentation (monobutyl oxopimelate, from oxopimelic acid diesters)				
IT	122249-67-6P RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation) (manuf. of, with bacteria or pig liver esterase, from oxopimelic acid diesters)				
IT	9013-79-0, Esterase RL: BIOL (Biological study) (monobutyl oxopimelate manuf. with pig liver, from oxopimelic acid diester)				
IT	122366-37-4	122366-38-5	122366-39-6	122366-40-9	
	RL: BIOL (Biological study) (monobutyl pimelate manuf. from, with bacteria or pig liver esterase)				
L1	ANSWER 117 OF 284 CAPLUS COPYRIGHT 2001 ACS				
AN	1988:146929 CAPLUS				
DN	108:146929				
TI	<i>Corynebacterium fascians</i> mutants adapted to 2-fluorobenzoic acid and incapable of benzoic acid utilization				
AU	Karasevich, Yu. N.; Ivoilov, V. S.				
CS	Inst. Mikrobiol., Moscow, USSR				
SO	Mikrobiologiya (1988), 57(1), 36-41				

CODEN: MIKBA5; ISSN: 0026-3656

- DT Journal
LA Russian
CC 10-2 (Microbial Biochemistry)
AB *C. jasicans* Mutants adapted to 2-fluorobenzoic acid as a main nutrient source cannot utilize benzoic acid. If such mutants are grown in a medium with benzoic acid, they accumulate 3,5-cyclohexadiene-1,2-diol-1-carboxylic acid (cis-dihydrodiol of benzoic acid) in the cultural broth. Therefore, the mutants are incapable of benzoic acid utilization due to a drastic drop in the activity of benzoic acid cis-dihydrodiol dehydrogenase, an enzyme involved in the third step of benzoic acid preparatory metab.
ST *Corynebacterium* benzoate metab fluorobenzoate adaptation
IT ***Corynebacterium fascians***
(adaptation of, to fluorobenzoic acid, benzoic acid metab. in relation to)
IT 65-85-0, Benzoic acid, biological studies
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(metab. of, by ***Corynebacterium fascians***, adaptation to fluorobenzoic acid in relation to)
IT 53414-67-8
RL: BIOL (Biological study)
(of ***Corynebacterium fascians***, benzoic acid metab. in relation to)
IT 445-29-4, 2-Fluorobenzoic acid
RL: BIOL (Biological study)
(***Corynebacterium fascians*** adaptation to, benzoic acid metab. in relation to)

L1 ANSWER 118 OF 284 CAPLUS COPYRIGHT 2001 ACS
AN 1987:495281 CAPLUS
DN 107:95281
TI Therapeutic carnitine manufacture by *Escherichia* and other species
IN Kawamura, Masao; Akutsu, Seiichi; Fukuda, Hirosuke; Hata, Hiroyuki; Morishita, Tsuyoshi; Kano, Kenji; Nishimori, Hirokuni
PA Seitetsu Chemical Industry Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C12P041-00
CC 16-2 (Fermentation and Bioindustrial Chemistry)
FAN.CNT 1
- | | PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|----|---|------|----------|-----------------|----------|
| | ----- | ---- | ----- | ----- | ----- |
| PI | JP 62118899 | A2 | 19870530 | JP 1985-260691 | 19851119 |
| AB | The DL-carnitine derivs. or salts DL-(Me)3N+CH2CH(OCOX)CH2CO2- (I) (X = alkyl, alkenyl or arom. carbohydryl) are contacted with <i>Escherichia</i> or other species or their enzyme preps. for stereospecific hydrolysis to obtain L-carnitine. <i>E. coli</i> IFO 3301 was shake-cultured in a medium contg. KH2PO4 0.3, K2HPO4 0.7, (NH4)2SO4 0.1, peptone 0.5, DL-carnitine-HCl 0.3, and yeast ext. 0.5% at 30.degree. for 2 days, and the cells were collected and incubated with 1% DL-acetylcarnitine-HCl in pH 7.0 phosphate buffer at 30.degree. for 18 h to give 5.5 mM L-carnitine. | | | | |
| ST | microbial carnitine deriv hydrolysis | | | | |
| IT | <i>Aspergillus niger</i>
<i>Bacillus sphaericus</i>
<i>Bacterium gracile</i>
<i>Brevibacterium linens</i>
<i>Citrobacter intermedius</i> | | | | |

Corynebacterium fascians

Enterobacter cloacae

Enterobacter hafniae

Escherichia coli

Flavobacterium esteroaromaticum

Fusarium solani

Klebsiella pneumoniae

Micrococcus flavus

Mucor oryzae

Neurospora crassa

Proteus mirabilis

Pseudomonas convexa

Salmonella typhimurium

Serratia marcescens

(L-carnitine manuf. from DL-carnitine derivs. by)

IT Fermentation

(L-carnitine, from DL-carnitine derivs., by Escherichia coli and other microorganisms)

IT 541-15-1P, L-Carnitine

RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)

(manuf. of, from DL-carnitine derivs., after microbial hydrolysis)

IT 79466-35-6

RL: BIOL (Biological study)

(L-carnitine manuf. from, by Escherichia coli and other microorganisms)

L1 ANSWER 119 OF 284 CAPLUS COPYRIGHT 2001 ACS

AN 1987:474037 CAPLUS

DN 107:74037

TI Enrichment of a **Corynebacterium fascians** population

with mutants deficient in the preparatory metabolism of benzoic acid during incubation with 3-fluorobenzoic and 4-fluorobenzoic acids

AU Karasevich, Yu. N.; Surovtseva, E. G.; Ivoilov, V. S.

CS Inst. Mikrobiol., Moscow, USSR

SO Mikrobiologiya (1987), 56(3), 403-9

CODEN: MIKBA5; ISSN: 0026-3656

DT Journal

LA Russian

CC 10-2 (Microbial Biochemistry)

AB When *C. fascians* cells were incubated with 3-fluorobenzoic acid (3-FBA) or 4-fluorobenzoic acid (4-FBA) under the conditions of batch cultivation, the population was enriched with mutants incapable of utilizing benzoic acid (BA). The no. of cells with the BA- phenotype reached 50% after 5 wk of *C. fascians* incubation with fluorobenzoic acids. The mutation process was specific: when the culture was incubated with 4-FBA, it mainly yielded mutants defective in BA dioxygenase whereas, in the case of 3-FBA, pyrocatechase inactivation was directly responsible for the loss of the ability to utilize BA.

ST *Corynebacterium* benzoate metab mutation fluorobenzoate

IT **Corynebacterium fascians**

(benzoic acid formation by, fluorobenzoate-induced mutation in relation to)

IT Mutation

(from fluorobenzoate, of **Corynebacterium fascians**, benzoic acid metab. in relation to)

IT 65-85-0, Benzoic acid, biological studies

RL: BPR (Biological process); BIOL (Biological study); PROC (Process)

(metab. of, by *Corynebacterium fascians*, fluorobenzoate-induced mutation in relation to)

IT 455-38-9, 3-Fluorobenzoic acid 456-22-4, 4-Fluorobenzoic acid

RL: BIOL (Biological study)
(mutation from, of *Corynebacterium fascians*,
benzoic acid metab. in relation to)

L1 ANSWER 120 OF 284 CAPLUS COPYRIGHT 2001 ACS
AN 1987:421936 CAPLUS
DN 107:21936
TI Selection of berberine-producing cultured plant cells
IN Suzuki, Toshiyuki; Hara, Yasuhiro
PA Mitsui Petrochemical Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C12N005-00
ICS C12Q001-04
ICA C12P017-18
ICI C12N005-00, C12R001-91
CC 16-2 (Fermentation and Bioindustrial Chemistry)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61285988	A2	19861216	JP 1985-128347	19850614
AB	A multiple no. of berberine-producing plant tissues are cultivated on solid media and the cultivated berberine-producing plant tissues are screened by the quant. detn. of berberine produced with a berberine-sensitive microorganism such as <i>Bacillus cereus</i> MT 2026 that is inhibited by berberine. Thus, <i>Thalictrum minus hypoleucum</i> tissues were cultured on agar media (6 mm diam.) contg. 10-5M naphthaleneacetic acid and 10-6M benzyladenine at 25.degree. for 2-3 wk; transferred to fresh agar media, incubated at 25.degree. overnight, and the amts. of berberine produced were detd. by the agar plate-inhibition diam. method with <i>B. cereus</i> MT 2026 for screening.				
ST	berberine producing plant tissue screening; <i>Bacillus berberine</i> producing tissue screening				
IT	<i>Brevibacterium ammoniagenes</i> (berberine manuf. by, agar plate screening method in)				
IT	<i>Achromobacter cycloclastes</i> <i>Arthrobacter simplex</i> <i>Bacillus cereus</i> <i>Bacterium gracile</i> <i>Corynebacterium fascians</i> <i>Micrococcus luteus</i> <i>Nocardia asteroides</i> <i>Pseudomonas fragi</i> (berberine-producing plant cell screening by agar plate with)				
IT	Plant tissue culture (of <i>Thalictrum minus hypoleucum</i> , for berberine prodn., screening of)				
IT	Meadow rue (<i>T. minus hypoleucum</i> , berberine-producing tissues of, screening of)				
IT	2086-83-1, Berberine RL: BIOL (Biological study) (plant tissues producing, screening of, by agar plate microorganism inhibition)				

L1 ANSWER 121 OF 284 CAPLUS COPYRIGHT 2001 ACS
AN 1987:404034 CAPLUS
DN 107:4034
TI Transformation and utilization of 4-fluorobenzoic acid by
Corynebacterium fascians

AU Ivoilov, V. S.; Karasevich, Yu. N.; Surovtseva, E. G.
 CS Inst. Mikrobiol., Moscow, USSR
 SO Mikrobiologiya (1987), 56(2), 199-204
 CODEN: MIKBA5; ISSN: 0026-3656
 DT Journal
 LA Russian
 CC 10-2 (Microbial Biochemistry)
 Section cross-reference(s): 4
 AB C. fascians INMI KIS-1 cannot utilize 4-fluorobenzoic acid (4-FBA), since one of the enzyme activities is absent at the terminal steps of 4-FBA metab. Up to 95% of the fluoride is split off during 4-FBA transformation. The quantity of 4-carboxymethylene butenolide and maleylacetate accumulated in the medium in the process of 4-FBA transformation corresponds, in stoichiometrical terms, to the amt. of added 4-FBA. This value is lower (26%) in a C. fascians INMI KIS-9 mutant capable of 4-FBA utilization. Therefore, C. fascians adaptation to 4-FBA should be attributed to the fact that one of the enzyme activities at the terminal steps of 4-FBA preparatory metab. (maleylacetate reductase) either appears or noticeably rises.
 ST Corynebacterium fluorobenzoate transformation maleylacetate reductase
 IT **Corynebacterium fascians**
 (fluorobenzoic acid metab. by)
 IT 689-31-6 3374-46-7 24740-88-3
 RL: FORM (Formation, nonpreparative)
 (formation of, from fluorobenzoic acid by **Corynebacterium fascians**)
 IT 456-22-4, 4-Fluorobenzoic acid
 RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
 (metab. of, by **Corynebacterium fascians**)
 IT 69669-65-4, Maleylacetate reductase
 RL: BIOL (Biological study)
 (of **Corynebacterium fascians**, fluorobenzoic acid metab. in relation to)
 L1 ANSWER 122 OF 284 CAPLUS COPYRIGHT 2001 ACS
 AN 1986:128232 CAPLUS
 DN 104:128232
 TI Manufacture of proteins with cell growth enhancing activity
 PA Maruho Co., Ltd., Japan
 SO Jpn. Kokai Tokkyo Koho, 24 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 IC ICM C07K015-04
 ICS A61K031-68; A61K033-30; A61K035-74; A61K037-02; A61K039-395;
 C12P021-00
 ICA C12N005-00
 ICI C12P021-00, C12R001-145; C12P021-00, C12R001-44; C12P021-00, C12R001-07;
 C12P021-00, C12R001-46; C12P021-00, C12R001-15; C12P021-00, C12R001-425
 CC 16-4 (Fermentation and Bioindustrial Chemistry)
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 60028999	A2	19850214	JP 1983-119863	19830630
	JP 05038000	B4	19930607		
	EP 134385	A2	19850320	EP 1984-101573	19840216
	EP 134385	A3	19870909		
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	AT 56729	E	19901015	AT 1984-101573	19840216
	CA 1224435	A1	19870721	CA 1984-448163	19840223

US 4604234 A 19860805 US 1984-584335 19840228

PRAI JP 1983-119863 19830630

EP 1984-101573 19840216

AB The title proteins are produced from cells of *Clostridium*, *Streptococcus*, *Saricina*, *Bacillus*, *Aerococcus*, *Streptococcus*, and other microorganisms. The protein is of a mol. wt. 5000-160,000 and free from nucleoside phosphotransferase. It contains a significant amt. of glutamic and aspartic acids as structural amino acids, and enhances cell growth, esp., of wound tissues. Thus, *C. perfringens* ATCC 21510 dried cells, (60 g) was extd. with tris-HCl buffer, pH 8.0. The residue was treated with trypsin, and the supernatant was collected. The supernatant was treated with protamine to remove nucleic acids. The supernatant was worked up by column chromatog on Sepharose C1-613 with tris-HCl buffer as an eluant to yield a protein fraction with cell growth-enhancing activity.

ST cell growth enhancement protein microorganism; *Clostridium* protein cell growth enhancement

IT *Acinetobacter calcoaceticus*
Aerococcus viridans
Aeromonas hydrophila
Bacillus subtilis
Clostridium perfringens
Corynebacterium fascians
Escherichia coli
Flavobacterium lutescens
Proteus mirabilis
Proteus vulgaris
Pseudomonas maltophilia
Sarcina lutea
Serratia marcescens
Staphylococcus aureus
Staphylococcus epidermidis
Streptococcus faecalis
(cell growth-enhancing protein manuf. with)

IT Fermentation
(cell growth-enhancing proteins, by microorganisms)

IT Proteins
RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP (Preparation)
(cell-growth enhancing, manuf. of, with microorganism)

L1 ANSWER 123 OF 284 CAPLUS COPYRIGHT 2001 ACS

AN 1986:112591 CAPLUS

DN 104:112591

TI Biological additives for improved mechanical dewatering of fuel-grade peat

AU Cooper, D. G.; Pillon, D. W.; Mulligan, C. N.; Sheppard, J. D.

CS Dep. Chem. Eng., McGill Univ., Montreal, PQ, H3A 2A7, Can.

SO Fuel (1986), 65(2), 255-9

CODEN: FUELAC; ISSN: 0016-2361

DT Journal

LA English

CC 51-22 (Fossil Fuels, Derivatives, and Related Products)
Section cross-reference(s): 44

AB Several different biol. compds. were effective pretreatment agents for the removal of water from highly humidified peat by mech. pressing. The peat was pressed for 2.5 min at 1.96 MPa. The agents added were polymers or surfactants. Two compds. were particularly effective. The cationic polysaccharide chitosan [9012-76-4] increased the amt. of water removed by 60% compared with the control. The surfactant from *Bacillus subtilis* increased the amt. of water removed by >50%. The mechanism of dewatering by the chitosan was coagulation of the colloidal particles of peat

suspended in water. This allowed efficient phase sepn. by pressing. The surfactant improved dewatering by increasing the spreading coeff. between the trapped interstitial water and the peat waxes.

ST peat fuel dewatering polymer surfactant

IT Polyelectrolytes
Polysaccharides, uses and miscellaneous
RL: USES (Uses)
(in removal of water from peat, by pressing)

IT Bacillus subtilis
Corynebacterium fascians
Corynebacterium lepus
(surfactants from, for water removal from peat, by pressing)

IT Peat
(water removal from, polymers and surfactants for, by pressing)

IT Drying
(dewatering, of peats, by pressing, polymers and surfactants for)

IT 7487-88-9, uses and miscellaneous 7647-14-5, uses and miscellaneous
12125-02-9, uses and miscellaneous
RL: USES (Uses)
(in removal of water from peat, by pressing)

IT 9012-76-4 26161-33-1 94189-08-9
RL: USES (Uses)
(in water removal from peat, by pressing)

L1 ANSWER 124 OF 284 CAPLUS COPYRIGHT 2001 ACS

AN 1986:68679 CAPLUS

DN 104:68679

TI .beta.-Substituted acrylic acid p-bromophenacyl esters

IN Osugi, Katsuhisa; Ichinose, Isao; Takahashi, Eisaku; Arataira, Masahito

PA Kureha Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C07C069-738

ICA A61K031-215; A61K031-42; C07C067-10

CC 26-6 (Biomolecules and Their Synthetic Analogs)
Section cross-reference(s): 10

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 60152443	A2	19850810	JP 1984-9874	19840123
GI					

BAP and indole-3-butyric acid (IBA) facilitated *embryo* *germination* which was also enhanced by cold treatment. Phenotypically normal plants were recovered from germinated *somatic* embryos and successfully transferred to the glasshouse for flowering.
MISCELLANEOUS TERMS: ...*SOMATIC* EMBRYOGENESIS

- end of record -

?

Display 7/8,K/114 (Item 114 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10671067 BIOSIS NO.: 199799292212

Preliminary investigations on *somatic* embryogenesis from leaf discs of red oak (*Quercus rubra* L.).
1996

REGISTRY NUMBERS: 9003-39-8: POLYVINYLPIRROLIDONE; 86-87-3Q:
NAPHTHALENEACETIC ACID; 26445-01-2Q: NAPHTHALENEACETIC ACID; 1214-39-7:
BENZYLADENINE

DESCRIPTORS:

MAJOR CONCEPTS: Chemical Coordination and Homeostasis; Development;
Horticulture (Agriculture); Morphology; Nutrition; Radiation Biology;
Reproduction
BIOSYSTEMATIC NAMES: Fagaceae--Dicotyledones, Angiospermae, Spermatophyta
, Plantae
ORGANISMS: red oak (Fagaceae); *Quercus rubra* (Fagaceae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants
CHEMICALS & BIOCHEMICALS: POLYVINYLPIRROLIDONE; NAPHTHALENEACETIC ACID;

-more-

?

Display 7/8,K/114 (Item 114 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
BENZYLADENINE

MISCELLANEOUS TERMS: Research Article; ADAXIAL SURFACE-MEDIUM CONTACT;
BENZYLADENINE; CALLUS; CALLUS FORMATION; CASEIN HYDROLYSATE;
DEVELOPMENT; *EMBRYO*; EXPLANT; *GERMINATION*; LEAF DISCS;
NAPHTHALENEACETIC ACID; NUTRIENT; POLYVINYLPIRROLIDONE; SEEDLING;
SOMATIC *EMBRYO*; *SOMATIC* EMBRYOGENESIS; TISSUE CULTURE

CONCEPT CODES:

51000 Morphology, Anatomy and Embryology of Plants
51504 Plant Physiology, Biochemistry and Biophysics-Nutrition
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances
51516 Plant Physiology, Biochemistry and Biophysics-Light and Radiation
Effects
53012 Horticulture-General; Miscellaneous and Mixed Crops

BIOSYSTEMATIC CODES:

26070 Fagaceae

-more-

?

Display 7/8,K/114 (Item 114 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
Preliminary investigations on *somatic* embryogenesis from leaf discs of red oak (*Quercus rubra* L.)....

- end of record -

?

Display 7/8,K/114 (Item 114 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

ABSTRACT: *Somatic* embryos were obtained from leaf discs of juvenile red oak plants. Basal inductive nutrient medium was a modified Murashige and

- end of record -

?

Display 7/8,K/121 (Item 121 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
MISCELLANEOUS TERMS: ...*EMBRYO* ABUNDANT GENE...

...*SOMATIC* EMBRYOGENESIS

- end of record -

?

Display 7/8,K/122 (Item 122 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10487242 BIOSIS NO.: 199699108387

Embryogenic cell suspensions from the male flower of Musa AAA cv. Grand nain.

1996

DESCRIPTORS:

MAJOR CONCEPTS: Development; Horticulture (Agriculture); Methods and Techniques; Reproduction

BIOSYSTEMATIC NAMES: Musaceae--Monocotyledones, Angiospermae, Spermatophyta, Plantae; Plantae-Unspecified--Plantae

ORGANISMS: banana (Musaceae); plant (Plantae - Unspecified); Musa (Musaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; monocots; plants; spermatophytes; vascular plants

MISCELLANEOUS TERMS: CULTURE METHOD; CV.-GRAND NAIN; DEVELOPMENT;

EMBRYOGENIC CELL SUSPENSIONS; METHODS AND TECHNIQUES; MICROPROPAGATION;

PACKED CELL VOLUME; *SOMATIC* EMBRYOS

CONCEPT CODES:

-more-

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Display 7/8,K/122 (Item 122 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
32500 Tissue Culture, Apparatus, Methods and Media
51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and Methods
53004 Horticulture-Tropical and Subtropical Fruits and Nuts; Plantation Crops
BIOSYSTEMATIC CODES:
25365 Musaceae

...ABSTRACT: of the embryogenic suspensions resulted in approximately 370 times to 3 embryos per ml of PCV. Depending on the size of embryos, 3 to 20% *germination* was observed. A histological survey of cell suspensions and *embryo* development was carried out. Cellular aggregates with cells displaying typical embryogenic features were formed. Most of the *somatic* embryos were probably of unicellular origin.

MISCELLANEOUS TERMS: ...*SOMATIC* EMBRYOS

- end of record -

?

Display 7/8,K/123 (Item 123 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10482052 BIOSIS NO.: 199699103197

Multicotyledonary structure of *somatic* embryos formed from cell cultures of Daucus carota L.

1996

REGISTRY NUMBERS: 94-75-7: 2 4-D

DESCRIPTORS:

MAJOR CONCEPTS: Development; Horticulture (Agriculture); Methods and

embryo stage, *somatic* embryos underwent some characteristic events of *germination*: the radical grew, tannins accumulated, and protodermal cells suberized. However the shoot apex was rapidly disorganized and disappeared. This peculiar behaviour is discussed in comparison with the phenomenon of precocious *germination* often observed for immature zygotic embryos in in vitro culture.

MISCELLANEOUS TERMS: ANTHR-DERIVED *SOMATIC* EMBRYOS...

...PRECOCIOUS *GERMINATION*;

- end of record -

?

Display 7/8,K/121 (Item 121 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10520372 BIOSIS NO.: 199699141517

Expression of abundant mRNAs during *somatic* embryogenesis of white spruce
(*Picea glauca* (Moench) Voss).

1996

REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID

DESCRIPTORS:

MAJOR CONCEPTS: Chemical Coordination and Homeostasis; Development;
Genetics

BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae;
Plantae-Unspecified--Plantae

ORGANISMS: plant (Plantae - Unspecified); white spruce (Coniferopsida);
Picea glauca (Coniferopsida)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: ABSCISIC ACID

MISCELLANEOUS TERMS: ABSCISIC ACID; COMPLEMENTARY DNA; DEVELOPMENT;
EMBRYO ABUNDANT GENE; MESSENGER RNA EXPRESSION; PLANT GROWTH

-more-

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Display 7/8,K/121 (Item 121 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

REGULATOR; *SOMATIC* EMBRYOGENESIS

CONCEPT CODES:

03504 Genetics and Cytogenetics-Plant

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

BIOSYSTEMATIC CODES:

25102 Coniferopsida

Expression of abundant mRNAs during *somatic* embryogenesis of white spruce
(*Picea glauca* (Moench) Voss).

...ABSTRACT: develop to cotyledonary embryos when these phytohormones are replaced by abscisic acid. Twenty-eight cDNAs were isolated from cotyledonary embryos by differential screening against immature *embryo* and non-embryonic tissues. Temporal expression patterns of these cDNAs during ABA-stimulated *somatic* *embryo* development were observed. This showed that clones could be allocated to various groups, including

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Display 7/8,K/121 (Item 121 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

embryo-abundant, *embryo*-maturation-induced, and those whose expression was modulated during *embryo* development, *germination* or in non-embryogenic tissues. Expression corresponding to these cDNA clones showed that there were various responses to exogenous ABA or polyethylene glycol during a...

maturation of *somatic* embryos. However, ICG 799 and ICG 1908 failed to develop into plantlets. In ICG 8123, *germination* of embryos were observed on MS basal medium.

MISCELLANEOUS TERMS: ...*EMBRYO*; ...

...*GERMINATION*; ...

...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/120 (Item 120 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10520397 BIOSIS NO.: 199699141542

Ontogenesis, differentiation and precocious *germination* in anther-derived *somatic* embryos of grapevine (*Vitis vinifera* L.): Embryonic organogenesis.

1996

DESCRIPTORS:

MAJOR CONCEPTS: Development; Morphology; Reproduction

BIOSYSTEMATIC NAMES: Plantae-Unspecified--Plantae; Vitaceae--

Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: grapevine (Vitaceae); plant (Plantae - Unspecified); *Vitis vinifera* (Vitaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants; spermatophytes; vascular plants

MISCELLANEOUS TERMS: ANTH-ER-DERIVED *SOMATIC* EMBRYOS;

CULTIVAR-GRRENACHE NOIR; DEVELOPMENT; DIFFERENTIATION; EMBRYOGENIC

ORGANOGENESIS; MORPHOLOGY; ONTOGENESIS; PRECOCIOUS *GERMINATION*;

SUBERIZATION; TANNIN ACCUMULATION

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Display 7/8,K/120 (Item 120 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
CONCEPT CODES:

51000 Morphology, Anatomy and Embryology of Plants

51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

BIOSYSTEMATIC CODES:

26940 Vitaceae

Ontogenesis, differentiation and precocious *germination* in anther-derived *somatic* embryos of grapevine (*Vitis vinifera* L.): Embryonic organogenesis.

ABSTRACT: *Somatic* embryos of *Vitis vinifera* L. 'Grenache noir' develop abnormally and form viable plantlets at very low frequencies. They grow continuously and, after the torpedo stage...

...form giant structures which do not undergo further organogenesis. Morphological, histological and cytochemical data were used to study

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Display 7/8,K/120 (Item 120 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

development from the globular to the giant-*embryo* stage. Histological organization of *somatic* embryos until the torpedo stage was similar to that of zygotic embryos. *Somatic* embryos formed bipolar axes, which differentiated precociously and simultaneously a root and a shoot meristem. However, they differed from their zygotic homologues by forming a cotyledonary crown or multiple cotyledons and by their rapid cellular differentiation. At the end of the torpedo stage and up to the giant-

their zygotic counterparts. Our results show that water relations parameters are remarkably conservative across species but that, within a given species, these...

- end of record -

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Display 7/8,K/118 (Item 118 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
MISCELLANEOUS TERMS: ...*SOMATIC* EMBRYOGENESIS

- end of record -

?

Display 7/8,K/119 (Item 119 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10557316 BIOSIS NO.: 199699178461

Induction of *somatic* embryogenesis from young leaflets of cultivated and wild species of groundnut.

1996

DESCRIPTORS:

MAJOR CONCEPTS: Agronomy (Agriculture); Development; Genetics; Morphology
; Reproduction

BIOSYSTEMATIC NAMES: Angiospermae--Angiospermae, Spermatophyta, Plantae;
Leguminosae--Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: crop (Angiospermae); groundnut (Leguminosae); Arachis
cardenasii (Leguminosae); Arachis duranensis (Leguminosae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

MISCELLANEOUS TERMS: AGRONOMY; DEVELOPMENT; *EMBRYO*; GENETICS;

GERMINATION; ICG 8123 GENOTYPE; PLANT REGENERATION; SEEDLING;

SOMATIC EMBRYOGENESIS; 9 GENOTYPES

CONCEPT CODES:

-more-

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Display 7/8,K/119 (Item 119 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
03504 Genetics and Cytogenetics-Plant
51000 Morphology, Anatomy and Embryology of Plants
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
52514 Agronomy-Oil Crops
BIOSYSTEMATIC CODES:
26260 Leguminosae

Induction of *somatic* embryogenesis from young leaflets of cultivated and wild species of groundnut.

ABSTRACT: *Somatic* embryos were induced from 7 day old seedling leaves of cultivated and wild species of groundnut. *Somatic* embryogenesis was observed only in ICG 799, ICG 1908 and ICG 8123 out of ten genotypes studied. Leaflets expanded rapidly, turned green within 10 days after inoculation and *somatic* embryogenesis was observed after 20-25 days of culture. MS media with various concentrations of 2,4-D (0.025 to 0.4 mg/L

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Display 7/8,K/119 (Item 119 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
...

...Among all the media evaluated, modified MS medium with 2.4-D (0.1 mg/L) + KN (0.5 mg/L) promoted high frequency of *somatic* embryogenesis i.e. 41.6% in ICG 8123, 27.3% in ICG 1908 and 21.7% in ICG 799. In all three genotypes, reduction in the concentration of 2,4-D (0.025 mg/L) favoured

or needle tissues from older plants. Abscissic acid and polyethylene glycol, stimulators for spruce *embryo* maturation. could also induce the hsp genes.

MISCELLANEOUS TERMS: ...*SOMATIC* EMBRYOGENESIS

- end of record -

?

Display 7/8,K/118 (Item 118 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10569980 BIOSIS NO.: 199699191125

Water relations parameters and tissue development in *somatic* and zygotic embryos of three pinaceous conifers.

1996

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Development; Forestry; Membranes (Cell Biology); Physiology

BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae

ORGANISMS: Larix occidentalis (Coniferopsida); Picea glauca (Coniferopsida); Pinus taeda (Coniferopsida)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants; spermatophytes; vascular plants

MISCELLANEOUS TERMS: OSMOTIC POTENTIAL; QUALITY SEEDLINGS; *SOMATIC* EMBRYOGENESIS

CONCEPT CODES:

10011 Biochemistry-Physiological Water Studies (1970-)

10508 Biophysics-Membrane Phenomena

-more-

?

Display 7/8,K/118 (Item 118 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

51502 Plant Physiology, Biochemistry and Biophysics-Water Relations

51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation

53500 Forestry and Forest Products

BIOSYSTEMATIC CODES:

25102 Coniferopsida

Water relations parameters and tissue development in *somatic* and zygotic embryos of three pinaceous conifers.

ABSTRACT: There is increasing interest in using *somatic* embryogenesis to meet the demand for high quality seedlings. However, in vitro production of propagules on a large scale depends on the optimization of the maturation and *germination* steps promoted by desiccation and subsequent imbibition of the *embryo*, respectively. It is therefore important to characterize zygotic and *somatic* embryos in terms of their water relations. Bound water, elastic modulus, osmotic potential at full turgor, and relative water content at turgor loss point were determined

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Display 7/8,K/118 (Item 118 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

for *somatic* and zygotic embryos of western larch and loblolly pine and *somatic* embryos of white spruce at two developmental stages. These water relations parameters were derived from water release curves obtained by suspending tissue samples in sealed...

...water relations parameters among species but marked stage dependency for bound water and elastic modulus. The amount of bound water was lowest in western larch *somatic* embryos (0.02-0.07) and highest in zygotic loblolly pine embryos (0.10-0.18). Elastic modulus ranged from 2.5 to 6.2 MPa in *somatic* embryos but varied between 1.4 and 1.8 MPa in zygotic embryos. The osmotic potential was lower in *somatic* embryos than in

especially important when maturation responses were incapable of distinguishing among age classes.
MISCELLANEOUS TERMS: ...*SOMATIC* *EMBRYO* *GERMINATION*; *SOMATIC*
EMBRYO MATURATION

- end of record -

?

Display 7/8,K/117 (Item 117 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10610198 BIOSIS NO.: 199699231343

Characterization of three heat-shock-protein genes and their developmental regulation during *somatic* embryogenesis in white spruce (*Picea glauca* (Moench) Voss).

1996

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Development; Genetics; Reproduction

BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae; Plantae-Unspecified--Plantae

ORGANISMS: plant (Plantae - Unspecified); white spruce (Coniferopsida); *Picea glauca* (Coniferopsida)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants; spermatophytes; vascular plants

MOLECULAR SEQUENCE DATABANK NUMBER: amino acid sequence; molecular sequence data

MISCELLANEOUS TERMS: DEVELOPMENT; DEVELOPMENTAL REGULATION;

-more-

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Display 7/8,K/117 (Item 117 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
HEAT-SHOCK-PROTEIN GENES; MOLECULAR GENETICS; *SOMATIC* EMBRYOGENESIS
CONCEPT CODES:

03504 Genetics and Cytogenetics-Plant

10064 Biochemical Studies-Proteins, Peptides and Amino Acids

10506 Biophysics-Molecular Properties and Macromolecules

51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

BIOSYSTEMATIC CODES:

25102 Coniferopsida

Characterization of three heat-shock-protein genes and their developmental regulation during *somatic* embryogenesis in white spruce (*Picea glauca* (Moench) Voss).

...ABSTRACT: 27 and 29) predicted to encode low-molecular-weight (LMW) heat-shock proteins (HSPs) were cloned and characterized from white spruce (*Picea glauca* (Moench) Voss) *somatic* *embryo* tissues by

-more-

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Display 7/8,K/117 (Item 117 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
differentially screening a cotyledonary *embryo* cDNA library. Clone PgEMB22 is predicted to encode a putative mitochondria-localized LMW HSP, and PgEMB27 and 29 are predicted to encode different cytoplasmic class II LMW HSPs, although they share 84.7% identity within DNA coding regions and 83.0% identity for predicted proteins. They are developmentally regulated during *somatic* *embryo* development and subsequent *embryo* *germination*. in addition they show strong response to heat-shock stress. Transcripts of the two kinds of hsp genes could be detected in embryogenic tissues before induction of *embryo* maturation, but subsequently increased, being most abundant at late *embryo* stages. Gene expression levels were very low or not detectable in germinated plantlets

temporal expression pattern of SBP65 during *germination* of zygotic seeds. Immunocytochemical studies revealed that the protein was present in the cytosol of all cotyledon cell types and at roughly the same concentration...

...the LEA (late embryogenesis abundant) group of seed proteins and demonstrate that the indication of synthesis of this protein is under the control of the *embryo*.

MISCELLANEOUS TERMS: ...*EMBRYO*; ...

...SEED *GERMINATION*;

- end of record -

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Display 7/8,K/116 (Item 116 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10631106 BIOSIS NO.: 199699252251

Variability in maturation and *germination* from white spruce *somatic* embryos, as affected by age and use of solid or liquid culture.

1996

DESCRIPTORS:

MAJOR CONCEPTS: Development; Methods and Techniques; Reproduction
BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae;
Plantae-Unspecified--Plantae

ORGANISMS: plant (Plantae - Unspecified); white spruce (Coniferopsida);
Picea glauca (Coniferopsida)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants;
spermatophytes; vascular plants

MISCELLANEOUS TERMS: AGE EFFECTS; CULTURE MEDIUM TYPE EFFECTS;
DEVELOPMENT; LIQUID CULTURE MEDIUM; METHODOLOGY; SOLID CULTURE MEDIUM;
SOMATIC *EMBRYO* *GERMINATION*;* *SOMATIC* *EMBRYO* MATURATION

CONCEPT CODES:

32500 Tissue Culture, Apparatus, Methods and Media

-more-

?

Display 7/8,K/116 (Item 116 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods

BIOSYSTEMATIC CODES:

25102 Coniferopsida

Variability in maturation and *germination* from white spruce *somatic* embryos, as affected by age and use of solid or liquid culture.

ABSTRACT: The yield of morphologically normal Stage 3 *somatic* embryos of white spruce (Picea glauca (Moench) Voss), and subsequent germinability, was affected by 'culture age and use of solid and/or liquid culture growth ...

...in older cultures was reduced as a result of culture pretreatment. for example, in the oldest liquid cultures these represented 83% of the Stage

-more-

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Display 7/8,K/116 (Item 116 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

3 *embryo* population without pretreatment and 45% with pretreatment. Normal Stage 3 *somatic* *embryo* yield and *germination* characteristics (radicle and epicotyl development) were informative in distinguishing among the conditions studied. *Germination* characteristics were

Skoog solution enriched with 500...

...or main veins present) was in contact with the medium. Large variation was observed in all experiments. Recurrent embryogenesis was observed at the base of *embryo* clusters with callus present; conversely, embryogenic potential was rapidly lost by subculturing full calli. Maturation, *germination* and development of isolated *somatic* embryos were obtained. However, the vast majority of embryos did not have viable apical bud meristems and on only a few occasions were shoots produced.
MISCELLANEOUS TERMS: ...*EMBRYO*; ...

...*GERMINATION*; ...

...*SOMATIC* *EMBRYO*; *SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/115 (Item 115 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10634678 BIOSIS NO.: 199699255823

SBP65, a seed-specific biotinylated protein, behaves as a LEA protein in developing pea embryos.

1996

REGISTRY NUMBERS: 8065-16-5: LEGUMIN

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Development; Metabolism; Morphology

BIOSYSTEMATIC NAMES: Leguminosae--Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: pea (Leguminosae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants; spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: LEGUMIN

MISCELLANEOUS TERMS: BIOCHEMISTRY AND BIOPHYSICS; *EMBRYO*;

EMBRYOGENESIS; LEA PROTEIN; LEGUMIN SYNTHESIS; SBP65; SEED

GERMINATION; SEED-SPECIFIC BIOTINYLATED PROTEIN; STRUCTURE; SYNTHESIS

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Display 7/8,K/115 (Item 115 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

CONCEPT CODES:

10064 Biochemical Studies-Proteins, Peptides and Amino Acids

10506 Biophysics-Molecular Properties and Macromolecules

13012 Metabolism-Proteins, Peptides and Amino Acids

51000 Morphology, Anatomy and Embryology of Plants

51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation

51519 Plant Physiology, Biochemistry and Biophysics-Metabolism

51522 Plant Physiology, Biochemistry and Biophysics-Chemical Constituents

BIOSYSTEMATIC CODES:

26260 Leguminosae

...ABSTRACT: after legumin synthesis had ceased. Cotyledonary zygotic embryos cultured in vitro kept the same pattern of synthesis for this protein. SBP65 was also expressed during *somatic* embryogenesis. In this instance, however, its synthesis occurred as early as the globular stage and before legumin synthesis started. Nevertheless, as soon as *somatic*

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Display 7/8,K/115 (Item 115 from file: 5)

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embryos rooted, the SBP65 level decreased, this being equivalent to the

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Display 7/8,K/112 (Item 112 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
combined with a slow dehydration, leads to enhance the *somatic* embryos'
desiccation tolerance.
MISCELLANEOUS TERMS: ...ENHANCING *SOMATIC* *EMBRYO* SURVIVAL...

- end of record -

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Display 7/8,K/113 (Item 113 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
10697962 BIOSIS NO.: 199799319107
***Somatic* embryogenesis and plant regeneration in Floribunda rose (Rosa hybrida L.) cvs Trumpeter and Glad Tidings.**
1996
DESCRIPTORS:
MAJOR CONCEPTS: Development; Horticulture (Agriculture); Methods and Techniques; Reproduction
BIOSYSTEMATIC NAMES: Rosaceae--Dicotyledones, Angiospermae, Spermatophyta, Plantae
ORGANISMS: Rosa hybrida (Rosaceae)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants; spermatophytes; vascular plants
MISCELLANEOUS TERMS: Research Article; CULTIVAR-GLAD TIDINGS; CULTIVAR-TRUMPETER; CULTURE METHOD; FLORIBUNDA ROSE; HORTICULTURE; METHODOLOGY; MISCELLANEOUS METHOD; PLANT REGENERATION; SCHENK AND HILDEBRANDT MEDIUM; *SOMATIC* EMBRYOGENESIS; TISSUE CULTURE
CONCEPT CODES:

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Display 7/8,K/113 (Item 113 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
32500 Tissue Culture, Apparatus, Methods and Media
51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and Methods
53010 Horticulture-Flowers and Ornamentals
BIOSYSTEMATIC CODES:
26675 Rosaceae

***Somatic* embryogenesis and plant regeneration in Floribunda rose (Rosa hybrida L.) cvs Trumpeter and Glad Tidings.**

ABSTRACT: *Somatic* embryogenic callus was initiated from in vitro-derived petiole and root explants, but not leaves, of the Floribunda rose cultivars Trumpeter and Glad Tidings following...

...on Schenk and Hildebrandt (SH) medium containing

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Display 7/8,K/113 (Item 113 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
2,4-dichlorophenoxyacetic acid (2,4-D). The use of a high auxin pretreatment increased the frequency of *somatic* embryogenesis, whilst L-proline, as a media supplement, had a critical role in enhancing *somatic* embryogenesis in the early stages of culture but increased the frequency of abnormal *embryo* formation when used in the later stages of culture. Maturation of *somatic* embryos was achieved by transfer to SH medium with reduced concentrations of 2,4-D and incorporation of abscisic acid (ABA) and 6-benzylaminopurine (BAP). The use of SH medium containing

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10704141 BIOSIS NO.: 199799325286

Enhancing carrot *somatic* embryos survival during slow dehydration, by encapsulation and control of dehydration.

1996

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Development; Horticulture (Agriculture); Methods and Techniques; Physiology

BIOSYSTEMATIC NAMES: Plantae-Unspecified--Plantae; Umbelliferae--

Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: carrot (Umbelliferae); plant (Plantae - Unspecified); Daucus carota (Umbelliferae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants; spermatophytes; vascular plants

MISCELLANEOUS TERMS: Research Article; DEHYDRATION CONTROL; DEVELOPMENT; ENCAPSULATION; ENHANCING *SOMATIC* *EMBRYO* SURVIVAL; HORTICULTURE; METHODOLOGY; MISCELLANEOUS METHOD; RELATIVE HUMIDITY; SLOW DEHYDRATION; WATER CONTENT PRESERVATION

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Display 7/8,K/112 (Item 112 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

CONCEPT CODES:

10011 Biochemistry-Physiological Water Studies (1970-)

10620 External Effects-Humidity (1972-)

51502 Plant Physiology, Biochemistry and Biophysics-Water Relations

51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and Methods

53008 Horticulture-Vegetables

BIOSYSTEMATIC CODES:

26915 Umbelliferae

Enhancing carrot *somatic* embryos survival during slow dehydration, by encapsulation and control of dehydration.

ABSTRACT: In order to obtain dry artificial seeds, carrot *somatic* embryos were encapsulated and dehydrated. Encapsulation in some hydrogels delayed the dehydration and preserved the water content of carrot *somatic*

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Display 7/8,K/112 (Item 112 from file: 5)

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embryos. In particular, a matrix made of alginate with gellan gum was found to be the most efficient in maintaining a high water activity (a-w) around *somatic* embryos. By delaying dehydration, and also rehydration, encapsulation seemed to protect *somatic* embryos against desiccation and imbibition damages, giving better *germination* and emergence of cotyledons. Matrices made of alginate mixed with kaolin or gellan gum were particularly adapted to protect the embryos during the dehydration. Apart from the matrix composition, the control of dehydration speed enhanced the survival and regeneration of encapsulated-dehydrated *somatic* embryos. Using a slow dehydration protocol (95-15% RH - relative humidity into the chamber - in 11.5 days), it was possible to exert different dehydration...

...encapsulation matrix, and enhanced the survival and regeneration frequencies of encapsulated-dehydrated embryos. In the absence of any maturing pretreatment, alginate-gellan gum encapsulated carrot *somatic* embryos, dehydrated to 15% RH, and rehydrated in moistured air (90% RH), germinated up to 72.9%. Therefore, encapsulation in alginate-gellan gum,

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Display 7/8,K/111 (Item 111 from file: 5)

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PHOSPHOGLUCONATE DEHYDROGENASE; ALCOHOL DEHYDROGENASE; ASPARTATE AMINOTRANSFERASE; PHOSPHOGLUCOMUTASE; EC 2.7.5.1

MISCELLANEOUS TERMS: Research Article; ALCOHOL DEHYDROGENASE; ARYLESTERASE; ASPARTATE AMINOTRANSFERASE; CELL SUSPENSION CULTURE; DEVELOPMENT; EC 2.7.5.1; ENZYMOLOGY; GLUCOSEPHOSPHATE ISOMERASE; ISOZYME PATTERNS; METHODOLOGY; PHOSPHOGLUCOMUTASE; PHOSPHOGLUCONATE DEHYDROGENASE; *SOMATIC* EMBRYOGENESIS; ZYGOTIC EMBRYOGENESIS

CONCEPT CODES:

10808 Enzymes-Physiological Studies

51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

51518 Plant Physiology, Biochemistry and Biophysics-Enzymes

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and Methods

BIOSYSTEMATIC CODES:

26915 Umbelliferae

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Display 7/8,K/111 (Item 111 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

Isozyme patterns in zygotic and *somatic* embryogenesis of carrot.

...ABSTRACT: stage up to 5-day-old seedlings have been compared with those of the similar stages from the embryogenic cell suspension culture to the late *somatic* plantlet. *Somatic* embryos blocked at the torpedo stage by beta-cyclodextrine have also been analyzed. All these stages have been analyzed with respect to seven different enzyme...

...7.5.1, PGM). The relationships between the different stages of both types of embryogenesis have been visualized using an unrooted tree. Generally, profiles of *somatic* embryos were different from those of zygotic embryos. Interestingly however, a typical zygotic *embryo* pattern was found in the cyclodextrine-blocked *somatic* embryos. Only aspartate aminotransferase patterns revealed a similarity between zygotic and *somatic* torpedo embryos. Both plantlet types showed close patterns with common isozymes. Moreover, similarities were evident between *somatic* plantlets and cell suspensions. A few isozymes appeared to be stage specific markers: esterase 10-11 were specific to achenes and early

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Display 7/8,K/111 (Item 111 from file: 5)

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germination, phosphogluconate dehydrogenase 8 was specific to 4-5 day-old seedlings and phosphoglucomutase 1 and 7 and alcohol dehydrogenase 4 were markers for zygotic embryos. No *somatic* embryogenesis specific isozyme could be found. We show that patterns can be associated with particular tissue formation: mainly, aspartate aminotransferase 2 and 1, phosphoglucomutase 8...

- end of record -

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Display 7/8,K/111 (Item 111 from file: 5)

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MISCELLANEOUS TERMS: ...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/112 (Item 112 from file: 5)

CULTURE METHOD; DEVELOPMENT; *GERMINATION* FREQUENCY; HORTICULTURE;
METHODOLOGY; PLANTLET; PLANTLET REGENERATION FREQUENCY; SECONDARY

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Display 7/8,K/110 (Item 110 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

EMBRYOGENESIS; *SOMATIC* *EMBRYO*; *SOMATIC* *EMBRYO* ENCAPSULATION;
SUCROSE; SYNTHETIC SEEDS

CONCEPT CODES:

25508 Developmental Biology-Embryology-Morphogenesis, General
51000 Morphology, Anatomy and Embryology of Plants
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods
53008 Horticulture-Vegetables

BIOSYSTEMATIC CODES:

26915 Umbelliferae

**Growth conditions influence regeneration of encapsulated carrot *somatic*
embryos into plantlets.**

ABSTRACT: Carrot *somatic* embryos were encapsulated in calcium alginate
beads, with or without a maturation step, to produce synthetic seeds.

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Display 7/8,K/110 (Item 110 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

Germination and plantlet regeneration frequencies were compared for
liquid or solid nutritive media, and with sucrose supply and
sterilization or not. *Germination* rates were greater than 80% in all
treatments except in non-sterilized sand. No conversion occurred on a
liquid MS medium. Normal plantlets were 7...

- end of record -

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Display 7/8,K/110 (Item 110 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

MISCELLANEOUS TERMS: ...*GERMINATION* FREQUENCY...

...*SOMATIC* *EMBRYO*; *SOMATIC* *EMBRYO* ENCAPSULATION

- end of record -

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Display 7/8,K/111 (Item 111 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10719563 BIOSIS NO.: 199799340708

Isozyme patterns in zygotic and *somatic* embryogenesis of carrot.
1996

REGISTRY NUMBERS: 9032-73-9: ARYLESTERASE; 9001-41-6: GLUCOSEPHOSPHATE
ISOMERASE; 9001-82-5Q: PHOSPHOGLUCONATE DEHYDROGENASE; 9073-95-4Q:
PHOSPHOGLUCONATE DEHYDROGENASE; 9031-72-5: ALCOHOL DEHYDROGENASE;
9000-97-9: ASPARTATE AMINOTRANSFERASE; 9001-81-4: PHOSPHOGLUCOMUTASE;
9001-81-4: EC 2.7.5.1

DESCRIPTORS:

MAJOR CONCEPTS: Development; Enzymology (Biochemistry and Molecular
Biophysics); Methods and Techniques; Reproduction

BIOSYSTEMATIC NAMES: Umbelliferae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: carrot (Umbelliferae); Daucus carota (Umbelliferae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: ARYLESTERASE; GLUCOSEPHOSPHATE ISOMERASE;

converted to plantlets better than globular embryos, but more secondary embryos...

- end of record -

?

Display 7/8,K/108 (Item 108 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
MISCELLANEOUS TERMS: ...*SOMATIC* *EMBRYO*

- end of record -

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Display 7/8,K/109 (Item 109 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10760158 BIOSIS NO.: 199799381303

***Somatic* embryogenesis and plant regeneration in Aegle marmelos: A multipurpose social tree.**

1996

DESCRIPTORS:

MAJOR CONCEPTS: Development; Morphology; Reproduction

BIOSYSTEMATIC NAMES: Rutaceae--Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: Aegle marmelos (Rutaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants; spermatophytes; vascular plants

MISCELLANEOUS TERMS: Research Article; DEVELOPMENT; *EMBRYO*;

GERMINATION; PLANT REGENERATION; *SOMATIC* EMBRYOGENESIS

CONCEPT CODES:

51000 Morphology, Anatomy and Embryology of Plants

51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation

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Display 7/8,K/109 (Item 109 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
BIOSYSTEMATIC CODES:
26685 Rutaceae

***Somatic* embryogenesis and plant regeneration in Aegle marmelos: A multipurpose social tree.**

MISCELLANEOUS TERMS: ...*EMBRYO*; *GERMINATION*; ...

...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/110 (Item 110 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10749374 BIOSIS NO.: 199799370519 /

Growth conditions influence regeneration of encapsulated carrot *somatic* embryos into plantlets.

1996

REGISTRY NUMBERS: 57-50-1: SUCROSE

DESCRIPTORS:

MAJOR CONCEPTS: Development; Horticulture (Agriculture); Methods and Techniques; Morphology

BIOSYSTEMATIC NAMES: Plantae-Unspecified--Plantae; Umbelliferae--Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: carrot (Umbelliferae); plant (Plantae - Unspecified)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants; spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: SUCROSE

MISCELLANEOUS TERMS: Research Article; BIOBUSINESS; BIOTECHNOLOGY;

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
MISCELLANEOUS TERMS: ...*GERMINATION*; ...

...IMMATURE *EMBRYO* CULTURE...

...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/108 (Item 108 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10764032 BIOSIS NO.: 199799385177

Abscisic acid and ancymidol promote conversion of *somatic* embryos to plantlets and secondary embryogenesis in *Asparagus officinalis* L.

1996

REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID; 12771-68-5: ANCYMIDOL

DESCRIPTORS:

MAJOR CONCEPTS: Chemical Coordination and Homeostasis; Development;
Methods and Techniques

BIOSYSTEMATIC NAMES: Liliaceae--Monocotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: *Asparagus officinalis* (Liliaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; monocots; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: ABSCISIC ACID; ANCYMIDOL

MISCELLANEOUS TERMS: Research Article; ABSCISIC ACID; ANCYMIDOL; CALLUS
CULTURE; CONVERSION; CULTURE METHOD; DEVELOPMENT; HORTICULTURE;
METHODOLOGY; PLANTLET GROWTH; SECONDARY EMBRYOGENESIS; *SOMATIC*

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Display 7/8,K/108 (Item 108 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

EMBRYO

CONCEPT CODES:

32500 Tissue Culture, Apparatus, Methods and Media

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods

BIOSYSTEMATIC CODES:

25345 Liliaceae

Abscisic acid and ancymidol promote conversion of *somatic* embryos to plantlets and secondary embryogenesis in *Asparagus officinalis* L.

...ABSTRACT: and 0.38 μ -M) or ancymidol (0, 0.98 μ -M, 1.95 μ -M, 2.93 μ -M, 3.90 μ -M) in *embryo* *germination* medium on the conversion of primary embryos to plantlets and secondary embryogenesis were evaluated for asparagus. ABA and ancymidol each significantly enhanced both

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Display 7/8,K/108 (Item 108 from file: 5)

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responses. ABA...

...in promoting the conversion of primary embryos to plantlets, while the converse was true for the production of secondary embryos. The most effective treatments for *embryo* conversion were 0.19 and 0.28 μ -M ABA; 75-77% bipolar and 55-57% globular embryos converted to plantlets. For secondary embryogenesis, the most effective treatments were 1.95 and 2.93 μ -M ancymidol; 99-101 and 84-86 *somatic* embryos were produced from 10 globular and 10 bipolar embryos, respectively. Bipolar embryos generally

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Display 7/8,K/106 (Item 106 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
MISCELLANEOUS TERMS: ...*SOMATIC* *EMBRYO* CULTURE

- end of record -

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Display 7/8,K/107 (Item 107 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10764141 BIOSIS NO.: 199799385286

***Somatic* embryogenesis and *germination* from immature embryos of *Quercus variabilis*.**

1995

DESCRIPTORS:

MAJOR CONCEPTS: Development; Forestry; Methods and Techniques;

Reproduction

BIOSYSTEMATIC NAMES: Fagaceae--Dicotyledones, Angiospermae, Spermatophyta
, Plantae

ORGANISMS: *Quercus variabilis* (Fagaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

MISCELLANEOUS TERMS: Research Article; CULTURE METHOD; FORESTRY;

GERMINATION; IMMATURE *EMBRYO* CULTURE; METHODOLOGY; PROPAGATION;

REPRODUCTION; *SOMATIC* EMBRYOGENESIS

CONCEPT CODES:

32500 Tissue Culture, Apparatus, Methods and Media

-more-

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Display 7/8,K/107 (Item 107 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods
53500 Forestry and Forest Products

BIOSYSTEMATIC CODES:

26070 Fagaceae

***Somatic* embryogenesis and *germination* from immature embryos of *Quercus variabilis*.**

...ABSTRACT: mg/L glutamine, 5 mM proline, and 30 g/L sucrose with 1.0 mg/L
IBA and BA in darkness for 4 weeks. Although *somatic* embryos could be
induced from all cultures, the highest percentage was observed from the
explants collected on July 29. After 4 weeks in initial culture...

...transferred to MS medium without any plant growth regulators, or

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Display 7/8,K/107 (Item 107 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
additives and maintained for 4 more weeks in the light. Among the various
types of *somatic* embryos developed, the cotyledonary-stage *somatic*
embryos were selected and transferred to on WPM(Woody Plant Medium)
containing 0.1 mg/L BA. Chilling treatment seemed to be effective for
both...

- end of record -

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Display 7/8,K/107 (Item 107 from file: 5)

Display 7/8,K/105 (Item 105 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

...mainly due to cell expansion and not division. After 4 weeks of maturation, ABA-minus embryos begin to elongate in the hypocotyl region, and precocious *germination* was observed frequently. Again, these morphogenetic events were largely due to abnormal timing of cell expansion. Histochemically, storage proteins were found only in *somatic* embryos matured for 4 weeks with ABA. This observation is in line with results obtained by total protein analysis, yielding significantly lower total protein contents in ABA-minus embryos both on a fresh weight and a per *embryo* basis after 4-5 weeks of maturation. Deposition of starch grains mainly in the cortex tissue of the hypocotyl region was observed within 2 weeks...

...present in all embryos from the very onset of development. They were localized preferentially in the proximal suspensor cells and the basal region of the *embryo*. However, accumulation of polyphenols was generally much more pronounced in embryos matured without ABA, indicating a lack of biochemical regulatory competence in those embryos.

MISCELLANEOUS TERMS: ...*SOMATIC* *EMBRYO* MATURATION

- end of record -

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Display 7/8,K/106 (Item 106 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10788843 BIOSIS NO.: 199799409988

Regeneration of ginseng (Panax ginseng C.A. Meyer) through the maturation process of *somatic* embryos.

1996

DESCRIPTORS:

MAJOR CONCEPTS: Development; Horticulture (Agriculture); Methods and Techniques

BIOSYSTEMATIC NAMES: Araliaceae--Dicotyledones, Angiospermae, Spermatophyta, Plantae

ORGANISMS: ginseng (Araliaceae); Panax ginseng (Araliaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants; spermatophytes; vascular plants

MISCELLANEOUS TERMS: Research Article; CULTURE METHOD; HORTICULTURE; METHODOLOGY; MURASHIGE AND SKOOG MEDIUM; PHARMACOGNOSY; PROPAGATION METHOD; REGENERATION; *SOMATIC* *EMBRYO* CULTURE

CONCEPT CODES:

32500 Tissue Culture, Apparatus, Methods and Media

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Display 7/8,K/106 (Item 106 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

51510 Plant Physiology, Biochemistry and Biophysics-Growth, Differentiation

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and Methods

53012 Horticulture-General; Miscellaneous and Mixed Crops

BIOSYSTEMATIC CODES:

25590 Araliaceae

Regeneration of ginseng (Panax ginseng C.A. Meyer) through the maturation process of *somatic* embryos.

...ABSTRACT: the culture temperature below 20 degree C, plumules of embryos were fully matured. Cotyledonary embryos with mature plumule produced both root and shoot on the *germination* medium containing 5 mu-M gibberellin (GA-3), while those with immature plumule produced only root on the *germination* medium. Plantlets, which were similar to ginseng seedlings in shape, were hardened for 4 weeks and then transplanted into soil.

development when calluses were maintained 2 months on the same medium. In this case, addition of benzylaminopurine (BAP) and 3,4-dichlorophenoxyacetic acid (3,4-D) increased the number of embryos produced (243 embryos g-1 FW callus) and their *germination* capacity (27%). These culture conditions were used to determine the optimum embryogenesis induction period. The length of the period affected both the intensity of embryogenesis (maximum 56-77 d) and *somatic* *embryo*

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Display 7/8,K/104 (Item 104 from file: 5)
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quality (maximum 49-70 d). The best results were obtained with a 70 d embryogenesis induction period, within which 355 embryos g-1 FW callus were obtained, with 35% *germination*.
MISCELLANEOUS TERMS: ...PERCENTAGE *GERMINATION*; ...

...*SOMATIC* EMBRYOGENESIS

- end of record -

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Display 7/8,K/105 (Item 105 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10794040 BIOSIS NO.: 199799415185
Effects of abscisic acid on *somatic* *embryo* maturation of hybrid larch.
1996
REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID
DESCRIPTORS:
MAJOR CONCEPTS: Chemical Coordination and Homeostasis; Development;
Reproduction
BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae
ORGANISMS: Larix x leptoeuropaea (Coniferopsida)
BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants;
spermatophytes; vascular plants
CHEMICALS & BIOCHEMICALS: ABSCISIC ACID
MISCELLANEOUS TERMS: Research Article; ABSCISIC ACID; CHEMICAL
COORDINATION; DEVELOPMENT; HYBRID LARCH; PLANT GROWTH REGULATOR;
POLYPHENOL ACCUMULATION; *SOMATIC* *EMBRYO* MATURATION
CONCEPT CODES:
51510 Plant Physiology, Biochemistry and Biophysics-Growth,

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Display 7/8,K/105 (Item 105 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.
Differentiation
51512 Plant Physiology, Biochemistry and Biophysics-Reproduction
51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances
BIOSYSTEMATIC CODES:
25102 Coniferopsida

Effects of abscisic acid on *somatic* *embryo* maturation of hybrid larch.

ABSTRACT: *Somatic* embryos of hybrid larch (Larix times leptoeuropaea) which had been matured for 4 weeks on maturation medium, developed normally on medium supplemented with 60-mu...

...around this time, abnormal development becomes evident macroscopically: ABA-minus embryos remain rather stubby as opposed to the more cylindrically shaped ABA-plus embryos. Whereas *somatic* embryos matured with ABA consist of densely cytoplasmic cells showing a high rate of cell division, ABA-minus embryos are largely made up of expanded...

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...*GERMINATION* MEDIUM...

...*SOMATIC* EMBRYOGENESIS CULTURE METHOD

- end of record -

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Display 7/8,K/104 (Item 104 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10835218 BIOSIS NO.: 199799456363

Use of calcium to optimize long-term proliferation of friable embryogenic calluses and plant regeneration in *Hevea brasiliensis* (Mull. Arg.).

1997

REGISTRY NUMBERS: 7440-70-2: CALCIUM

DESCRIPTORS:

MAJOR CONCEPTS: Cell Biology; Chemical Coordination and Homeostasis;
Development; Horticulture (Agriculture); Methods and Techniques;
Reproduction

BIOSYSTEMATIC NAMES: Euphorbiaceae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae; Plantae-Unspecified--Plantae

ORGANISMS: plant (Plantae - Unspecified); *Hevea brasiliensis*
(Euphorbiaceae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: CALCIUM

MISCELLANEOUS TERMS: Research Article; CALCIUM; CALLUS CYTOLOGICAL

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Display 7/8,K/104 (Item 104 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

STRUCTURE; DEVELOPMENT; FRIABLE EMBRYONIC CALLUSES; HORTICULTURE;
LONG-TERM PROLIFERATION OPTIMIZATION; PERCENTAGE *GERMINATION*; PLANT
REGENERATION; REPRODUCTIVE SYSTEM; *SOMATIC* EMBRYOGENESIS

CONCEPT CODES:

02504 Cytology and Cytochemistry-Plant

10059 Biochemical Methods-Minerals

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51512 Plant Physiology, Biochemistry and Biophysics-Reproduction

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

53004 Horticulture-Tropical and Subtropical Fruits and Nuts; Plantation
Crops

BIOSYSTEMATIC CODES:

26055 Euphorbiaceae

ABSTRACT: In *Hevea brasiliensis* (Mull. Arg.), increasing the calcium content of the friable callus maintenance medium from 3 to 9 mM stimulated regeneration potential through *somatic* embryogenesis. This

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Display 7/8,K/104 (Item 104 from file: 5)

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stimulation could be attributed to the homogeneous cytological structure of calluses, which were formed of undifferentiated cells capable of *somatic* embryogenesis in optimal culture conditions. The very marked increase in the active cell population was sufficient to cause a decrease and a stabilization of water...

...water content increased. The regeneration capacity of calluses cultured on a medium with additional CaCl-2 was greater in terms of both quantity (number of *somatic* embryos produced was increased 2-fold) and quality (*germination* efficiency trebled). High CaCl-2 concentrations (9 mM CaCl-2) in the embryogenesis induction medium favoured *somatic* *embryo*

...fashion. Regardless of RH, transient increases in ABA were observed that were paralleled by marked decreases in ABAGE. It is concluded that the desiccation of *somatic* embryos which leads to a decrease in ABA content, could explain the enhanced *germination* capacity of such embryos.

MISCELLANEOUS TERMS: ...*SOMATIC* *EMBRYO*

- end of record -

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Display 7/8,K/103 (Item 103 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10856654 BIOSIS NO.: 199799477799

**High frequency of plant regeneration in sunflower from cotyledons via
somatic embryogenesis.**

1997

DESCRIPTORS:

MAJOR CONCEPTS: Development; Methods and Techniques

BIOSYSTEMATIC NAMES: Compositae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: sunflower (Compositae); Helianthus annuus (Compositae)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): angiosperms; dicots; plants;
spermatophytes; vascular plants

MISCELLANEOUS TERMS: Research Article; COTYLEDON; COTYLEDON

DEVELOPMENTAL STAGE; DEVELOPMENT; *EMBRYO* INDUCTION MEDIUM;

GERMINATION MEDIUM; METHODOLOGY; MURASHIGE AND SKOOG MEDIUM; ROOTING

MEDIUM; *SOMATIC* EMBRYOGENESIS CULTURE METHOD; TISSUE CULTURE MEDIA;

TISSUE CULTURE METHOD; VITAMINS MEDIUM

CONCEPT CODES:

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Display 7/8,K/103 (Item 103 from file: 5)
DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

32500 Tissue Culture, Apparatus, Methods and Media

51510 Plant Physiology, Biochemistry and Biophysics-Growth,
Differentiation

51524 Plant Physiology, Biochemistry and Biophysics-Apparatus and
Methods

BIOSYSTEMATIC CODES:

25840 Compositae

**High frequency of plant regeneration in sunflower from cotyledons via
somatic embryogenesis.**

ABSTRACT: A plant regeneration method via *somatic* embryogenesis of several Helianthus annuus L. genotypes was developed. Starting from cotyledonary explants high frequency *embryo* induction was obtained following several subcultures on defined media. An appropriate cotyledon developmental stage was identified. Etiolated explants and darkness treatment were necessary to obtain *somatic* embryos in all tested genotypes. After 20-25 days on *somatic* induction medium containing an

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Display 7/8,K/103 (Item 103 from file: 5)
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auxin:cytokinin ratio of 1:1, the gemination of embryos was induced by a reduction of the hormonal ratio (1:2...

...49-82%) was obtained using a medium supplemented with 0.5 mg/L of ancymidol and by a reduction of photoperiod. A large percentage of *somatic* embryos developed into normal regenerated plants producing viable seeds.

MISCELLANEOUS TERMS: ...*EMBRYO* INDUCTION MEDIUM...

to an embryogenesis re-induction process with 2,4-D and BA, these Stage III embryos produced a new generation of Stage I embryogenic tissues which could tolerate 5-10 mg/l kanamycin. Stage III *somatic* embryos could alternatively be placed onto *germination* medium for the development of *somatic* seedlings. When germinated in the presence of 20 mg/l kanamycin, 77% of inoculants were resistant. The stability of integration of the gus::nptII fusion gene in the genome of white spruce Stage III *somatic* embryos and *somatic* seedlings was confirmed through Southern blot analysis.

MISCELLANEOUS TERMS: ...*EMBRYO*;

- end of record -

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Display 7/8,K/102 (Item 102 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10856948 BIOSIS NO.: 199799478093

Desiccation decreases abscisic acid content in hybrid larch (*Larix X*

***Leptoeuropaea*) *somatic* embryos.**

1997

REGISTRY NUMBERS: 21293-29-8: ABSCISIC ACID

DESCRIPTORS:

MAJOR CONCEPTS: Biochemistry and Molecular Biophysics; Chemical

Coordination and Homeostasis; Metabolism; Physiology

BIOSYSTEMATIC NAMES: Coniferopsida--Gymnospermae, Spermatophyta, Plantae

ORGANISMS: *Larix x leptoeuropaea* (Coniferopsida)

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): gymnosperms; plants;

spermatophytes; vascular plants

CHEMICALS & BIOCHEMICALS: ABSCISIC ACID

MISCELLANEOUS TERMS: Research Article; ABSCISIC ACID; ABSCISIC ACID

GLUCOSE ESTER; CONTENT DECREASE; DESICCATION; ELISA; HYBRID LARCH;

IMMUNOLOGIC METHOD; METABOLISM; RELATIVE HUMIDITY; *SOMATIC* *EMBRYO*

CONCEPT CODES:

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Display 7/8,K/102 (Item 102 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

10011 Biochemistry-Physiological Water Studies (1970-)

10066 Biochemical Studies-Lipids

10620 External Effects-Humidity (1972-)

13006 Metabolism-Lipids

51502 Plant Physiology, Biochemistry and Biophysics-Water Relations

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances

51519 Plant Physiology, Biochemistry and Biophysics-Metabolism

51522 Plant Physiology, Biochemistry and Biophysics-Chemical

Constituents

BIOSYSTEMATIC CODES:

25102 Coniferopsida

Desiccation decreases abscisic acid content in hybrid larch (*Larix X*

***Leptoeuropaea*) *somatic* embryos.**

ABSTRACT: Previous studies indicated that the high endogenous abscisic acid (ABA) content of hybrid larch (*Larix x leptoeuropaea*) *somatic* embryos was con-elated with low *germination* frequency. However, when dried, the

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Display 7/8,K/102 (Item 102 from file: 5)

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germination rate of the *somatic* embryos improved. Therefore, our present objective was to study the effect of desiccation on the levels of ABA and its glucose ester metabolite. Cotyledonary *somatic* embryos were subjected to drying treatments at 4 degree C under relative humidities of 98 and 59% for one week and the levels of both...

SL Dutch
CC F832 Plant Diseases, Bacterial

L1 ANSWER 17 OF 284 AGRICOLA
AN 81:12379 AGRICOLA
DN IND81011695

TI The role of bacterial pathogens **Corynebacterium fascians**
, *Xanthomonas pelargonii* in Pelargonium.
Zur Rolle bakterieller Krankheitserreger an Pelargonien.

AU Brother, H.

AV DNAL (SB599.N34)

SO Nachrichtenblatt für den Pflanzenschutz in der DDR., 1979 Vol. 33, No. 11.
p. 225-228 ill
Publisher: Berlin, Akademie der Landwirtschaftswissenschaften der
Deutschen Demokratischen Republik.
ISSN: 0323-5912

NTE 5 ref.

DT Article

FS Non-U.S. Imprint other than FAO

LA German

SL English; Russian

CC F832 Plant Diseases, Bacterial

L1 ANSWER 18 OF 284 AGRICOLA
AN 80:86047 AGRICOLA
DN IND80073548

TI Recent observations on leafy gall [**Corynebacterium fascians**] in Liliaceae and some other families.

AU Miller, H.J.; Janse, J.D.; Kamerman, W.; Muller, P.J.

AV DNAL (464.8 T44)

SO Netherlands journal of plant pathology., 1980 Vol. 86, No. 2. p. 55-68 ill
Publisher: Wageningen, Netherlands Society of Plant Pathology.
ISSN: 0028-2944

NTE 23 ref.

DT Article

FS Non-U.S. Imprint other than FAO

LA English

SL Dutch

CC F832 Plant Diseases, Bacterial

L1 ANSWER 19 OF 284 AGRICOLA
AN 80:68526 AGRICOLA
DN IND80055874

TI A bioassay to examine plants suspected of infection with
Corynebacterium fascians.
Test pro vyšetření rostlin podezřelých z ochravní vyvolaneho
Corynebacterium fascians.

AU Ulrychová, M.; Petru, E.; Jirsaková, E.

CS Československá akademie zemědělská; Ústav vědeckotechnických informací

AV DNAL (464.8 SB5)

SO Sborník UVTIZ; ochrana rostlin., Nov 1979 Vol. 15, No. 4. p. 245-251 ill
Publisher: Praha, Ústav.
ISSN: 0036-5394

NTE 15 ref.

DT Article

FS Non-U.S. Imprint other than FAO

LA Czech

SL English; German; Russian

CC F832 Plant Diseases, Bacterial

Differentiation

51514 Plant Physiology, Biochemistry and Biophysics-Growth Substances
51522 Plant Physiology, Biochemistry and Biophysics-Chemical
Constituents
53010 Horticulture-Flowers and Ornamentals

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Display 7/8,K/2 (Item 2 from file: 5)

DIALOG(R)File 5:(c) 2001 BIOSIS. All rts. reserv.

53012 Horticulture-General; Miscellaneous and Mixed Crops

BIOSYSTEMATIC CODES:

26675 Rosaceae

**Effect of vitamins and inorganic micronutrients on callus growth and
somatic embryogenesis from young mature leaves of rose.**

ABSTRACT: The effect of different vitamins and inorganic micronutrients on callus growth and on the induction and proliferation of *somatic* embryos from young mature, fully expanded leaves of rose (*Rosa* hybrids L.) was investigated. Explants were cultured onto a solid Murashige and Skoog (MS) medium...

...and cobalt (Co), which were added at either the standard MS concentration or at a tenfold increased (Cu, Co) or decreased (Mn, Zn, I) concentration. *Embryo* maturation and *germination* took place on a MS medium supplemented with 5.2 μ M 6-benzyladenine and 5.7 μ M 3-indole-acetic acid. The results indicated that *somatic* embryogenesis

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Display 7/8,K/2 (Item 2 from file: 5)

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from rose leaves was favored by the addition of nicotinic acid and cystein to the culture medium and the increase of Cu concentration, without reducing *embryo* maturation and *germination*.

...METHODS & EQUIPMENT: Murashige and Skoog medium, propagation method, *somatic* embryogenesis

- end of record -

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Display 7/8,K/3 (Item 3 from file: 5)

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12700970 BIOSIS NO.: 200000454472

**Analysis of the effects of maturation treatments on the probabilities of
somatic *embryo* *germination* and plantlet regeneration in pistachio
using a linear logistic method.**

2000

REGISTRY NUMBERS: 21293-29-8: ABA; 21293-29-8: ABSCISIC ACID; 50-32-8Q: BAP
; 94-41-7Q: BAP; 1214-39-7Q: BAP; 12788-93-1Q: BAP; 1214-39-7:

BENZYLAMINOPURINE; 25322-68-3: POLYETHYLENE GLYCOL

DESCRIPTORS:

MAJOR CONCEPTS: Horticulture (Agriculture); Development; Methods and
Techniques

BIOSYSTEMATIC NAMES: Anacardiaceae--Dicotyledones, Angiospermae,
Spermatophyta, Plantae

ORGANISMS: *Pistacia vera* {pistachio} (Anacardiaceae)--nut crop

BIOSYSTEMATIC CLASSIFICATION (SUPER TAXA): Angiosperms; Dicots; Plants;
Spermatophytes; Vascular Plants

CHEMICALS & BIOCHEMICALS: ABA {abscisic acid}; BAP {benzylaminopurine};

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Display 7/8,K/3 (Item 3 from file: 5)

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